# Full wwPDB EM Validation Report ⓘ

Dec 15, 2025 – 04:48 PM EST

| | | |
|---|---|---|
| PDB ID | : | 9P7F / pdb_00009p7f |
| EMDB ID | : | EMD-71340 |
| Title | : | In situ HHT and CHX treated A-P state 80S ribosome |
| Authors | : | Wei, Z.; Yong, X. |
| Deposited on | : | 2025-06-20 |
| Resolution | : | 3.56 Å(reported) |

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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The following versions of software and data (see references ⓘ) were used in the production of this report:

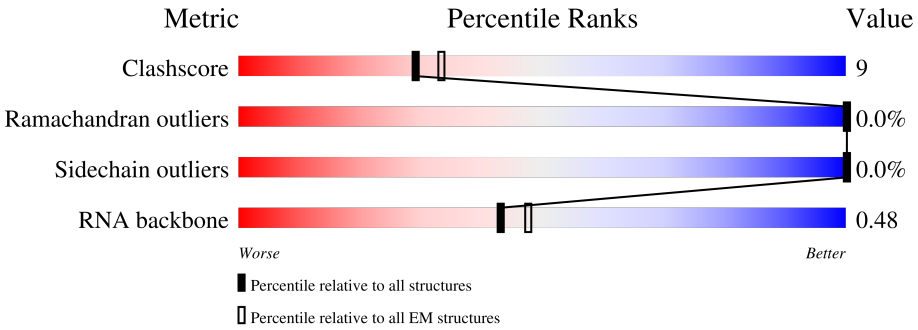
| | | |
|---|---|---|
| EMDB validation analysis | : | 0.0.1.dev129 |
| Mogul | : | 2022.3.0, CSD as543be (2022) |
| MolProbity | : | 4-5-2 with Phenix2.0 |
| buster-report | : | 1.1.7 (2018) |
| Percentile statistics | : | 20231227.v01 (using entries in the PDB archive December 27th 2023) |
| EM percentile statistics | : | 202505.v01 (Using data in the EMDB archive up until May 2025) |
| MapQ | : | 1.9.13 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.47 |

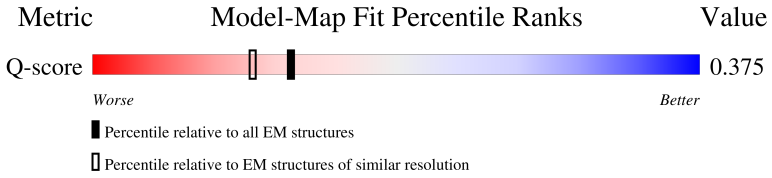
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.56 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.




| Metric | Whole archive (#Entries) | EM structures (#Entries) | Similar EM resolution (#Entries, resolution range(Å)) |
|---|---|---|---|
| Clashscore | 210492 | 15764 | - |
| Ramachandran outliers | 207382 | 16835 | - |
| Sidechain outliers | 206894 | 16415 | - |
| RNA backbone | 6643 | 2191 | - |
| Q-score | - | 25397 | 12750 ( 3.06 - 4.06 ) |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 1 | SA | 221 | 69% 31% |
| 2 | SB | 214 | 78% 22% |
| 3 | SC | 222 | 73% 26% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 4 | SE | 262 | 75% 25% |
| 5 | SG | 237 | 72% 28% |
| 6 | SH | 189 | 70% 29% |
| 7 | SI | 206 | 78% 22% |
| 8 | SJ | 185 | 74% 26% |
| 9 | SL | 153 | 78% 22% |
| 10 | SN | 150 | 85% 15% |
| 11 | SO | 140 | 75% 23% |
| 12 | SV | 83 | 89% 11% |
| 13 | SW | 129 | 76% 24% |
| 14 | SX | 141 | 80% 20% |
| 15 | SY | 131 | 5% 79% 21% |
| 16 | Sa | 102 | 74% 26% |
| 17 | Sb | 83 | 71% 29% |
| 18 | Se | 58 | 5% 76% 24% |
| 19 | S2 | 1740 | 40% 49% 11% |
| 20 | LR | 187 | 80% 19% |
| 21 | LW | 124 | 72% 22% 6% |
| 22 | SR | 135 | 79% 20% |
| 23 | SD | 227 | 78% 22% |
| 24 | SF | 189 | 75% 25% |
| 25 | SK | 98 | 77% 23% |
| 26 | SM | 122 | 6% 80% 20% |
| 27 | SP | 121 | 82% 18% |
| 28 | SQ | 144 | 72% 28% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 29 | SS | 145 | 78% 22% |
| 30 | ST | 143 | 80% 20% |
| 31 | SU | 104 | 73% 27% |
| 32 | SZ | 75 | 77% 23% |
| 33 | Sc | 64 | 83% 17% |
| 34 | Sd | 55 | 62% 38% |
| 35 | Sf | 67 | 79% 21% |
| 36 | Sg | 313 | 67% 33% |
| 37 | At | 71 | 39% 52% 8% |
| 38 | Pt | 74 | 50% 43% 7% |
| 39 | CI | 31 | 10% 87% 13% |
| 40 | L5 | 3655 | 44% 46% 10% |
| 41 | L7 | 120 | 47% 46% 8% |
| 42 | L8 | 156 | 51% 44% 6% |
| 43 | LA | 248 | 71% 29% |
| 44 | LB | 402 | 79% 21% |
| 45 | LC | 368 | 85% 15% |
| 46 | LD | 293 | 81% 19% |
| 47 | LE | 250 | 75% 21% |
| 48 | LF | 225 | 86% 14% |
| 49 | LG | 241 | 86% 14% |
| 50 | LH | 190 | 85% 15% |
| 51 | LI | 213 | 86% 14% |
| 52 | LJ | 176 | 77% 20% |
| 53 | LL | 210 | 87% 13% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 54 | LM | 139 | 83% 17% |
| 55 | LN | 203 | 85% 15% |
| 56 | LO | 201 | 84% 16% |
| 57 | LP | 153 | 78% 22% |
| 58 | LQ | 187 | 83% 17% |
| 59 | LS | 175 | 86% 14% |
| 60 | LT | 159 | 85% 15% |
| 61 | LU | 101 | 84% 16% |
| 62 | LV | 131 | 81% 19% |
| 63 | LX | 120 | 88% 12% |
| 64 | LY | 134 | 85% 15% |
| 65 | LZ | 135 | 84% 16% |
| 66 | La | 147 | 87% 13% |
| 67 | Lb | 121 | 71% 19% 10% |
| 68 | Lc | 98 | 85% 15% |
| 69 | Ld | 107 | 83% 17% |
| 70 | Le | 128 | 91% 9% |
| 71 | Lf | 109 | 81% 19% |
| 72 | Lg | 114 | 91% 9% |
| 73 | Lh | 122 | 83% 17% |
| 74 | Li | 102 | 90% 10% |
| 75 | Lj | 86 | 84% 16% |
| 76 | Lk | 69 | 80% 20% |
| 77 | Ll | 50 | 80% 20% |
| 78 | Lm | 52 | 83% 17% |

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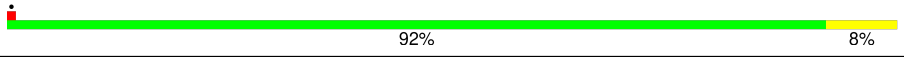
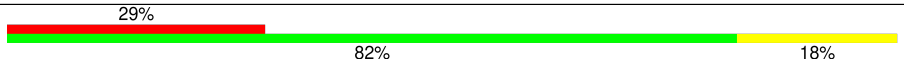
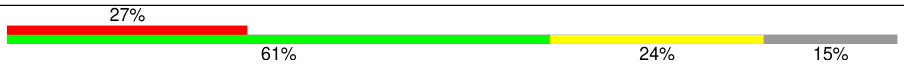
| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 79 | Ln | 24 | |
| 80 | Lo | 105 | |
| 81 | Lp | 91 |   |
| 82 | Lr | 125 | |
| 83 | Ls | 196 |   |
| 84 | Lt | 157 |   |

# 2 Entry composition

There are 90 unique types of molecules in this entry. The entry contains 219950 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called 40S ribosomal protein SA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 1 | SA | 221 | 1741 | 1106 | 305 | 322 | 8 | 0 | 0 |

- Molecule 2 is a protein called 40S ribosomal protein S3a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 2 | SB | 214 | 1738 | 1103 | 310 | 311 | 14 | 0 | 0 |

- Molecule 3 is a protein called 40S ribosomal protein S2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 3 | SC | 220 | 1707 | 1104 | 293 | 300 | 10 | 0 | 0 |

- Molecule 4 is a protein called Small ribosomal subunit protein eS4, X isoform.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 4 | SE | 262 | 2076 | 1324 | 386 | 358 | 8 | 0 | 0 |

- Molecule 5 is a protein called 40S ribosomal protein S6.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 5 | SG | 237 | 1923 | 1200 | 387 | 329 | 7 | 0 | 0 |

- Molecule 6 is a protein called Small ribosomal subunit protein eS7.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 6 | SH | 186 | 1497 | 956 | 274 | 266 | 1 | 0 | 0 |

- Molecule 7 is a protein called 40S ribosomal protein S8.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 7 | SI | 206 | Total | C | N | O | S | 0 | 0 |
| | | | 1686 | 1058 | 332 | 291 | 5 | | |

- Molecule 8 is a protein called 40S ribosomal protein S9.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 8 | SJ | 185 | Total | C | N | O | S | 0 | 0 |
| | | | 1525 | 969 | 306 | 248 | 2 | | |

- Molecule 9 is a protein called 40S ribosomal protein S11.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 9 | SL | 153 | Total | C | N | O | S | 0 | 0 |
| | | | 1247 | 793 | 234 | 214 | 6 | | |

- Molecule 10 is a protein called 40S ribosomal protein S13.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 10 | SN | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1208 | 773 | 229 | 205 | 1 | | |

- Molecule 11 is a protein called Small ribosomal subunit protein uS11.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 11 | SO | 137 | Total | C | N | O | S | 0 | 0 |
| | | | 1024 | 627 | 200 | 191 | 6 | | |

- Molecule 12 is a protein called Small ribosomal subunit protein eS21.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 12 | SV | 83 | Total | C | N | O | S | 0 | 0 |
| | | | 636 | 393 | 117 | 121 | 5 | | |

- Molecule 13 is a protein called 40S ribosomal protein S15a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 13 | SW | 129 | Total | C | N | O | S | 0 | 0 |
| | | | 1034 | 659 | 193 | 176 | 6 | | |

- Molecule 14 is a protein called 40S ribosomal protein S23.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 14 | SX | 141 | Total | C | N | O | S | 0 | 0 |
| | | | 1098 | 693 | 219 | 183 | 3 | | |

- Molecule 15 is a protein called 40S ribosomal protein S24.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 15 | SY | 131 | Total | C | N | O | S | 0 | 0 |
| | | | 1065 | 673 | 209 | 178 | 5 | | |

- Molecule 16 is a protein called 40S ribosomal protein S26.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 16 | Sa | 102 | Total | C | N | O | S | 0 | 0 |
| | | | 821 | 512 | 171 | 133 | 5 | | |

- Molecule 17 is a protein called Small ribosomal subunit protein eS27.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 17 | Sb | 83 | Total | C | N | O | S | 0 | 0 |
| | | | 651 | 408 | 121 | 115 | 7 | | |

- Molecule 18 is a protein called Small ribosomal subunit protein eS30.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 18 | Se | 58 | Total | C | N | O | S | 0 | 0 |
| | | | 459 | 284 | 100 | 74 | 1 | | |

- Molecule 19 is a RNA chain called 18S rRNA [Homo sapiens].

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 19 | S2 | 1740 | Total | C | N | O | P | 0 | 0 |
| | | | 36952 | 16508 | 6600 | 12105 | 1739 | | |

- Molecule 20 is a protein called 60S ribosomal protein L19.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 20 | LR | 187 | Total | C | N | O | S | 0 | 0 |
| | | | 1566 | 971 | 336 | 250 | 9 | | |

- Molecule 21 is a protein called Ribosomal protein L24.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 21 | LW | 116 | Total | C | N | O | S | 0 | 0 |
| | | | 945 | 592 | 193 | 156 | 4 | | |

- Molecule 22 is a protein called Small ribosomal subunit protein eS17.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 22 | SR | 135 | Total | C | N | O | S | 0 | 0 |
| | | | 1090 | 685 | 202 | 198 | 5 | | |

- Molecule 23 is a protein called Small ribosomal subunit protein uS3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 23 | SD | 227 | Total | C | N | O | S | 0 | 0 |
| | | | 1765 | 1125 | 317 | 315 | 8 | | |

- Molecule 24 is a protein called 40S ribosomal protein S5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 24 | SF | 189 | Total | C | N | O | S | 0 | 0 |
| | | | 1495 | 934 | 284 | 270 | 7 | | |

- Molecule 25 is a protein called 40S ribosomal protein S10.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 25 | SK | 98 | Total | C | N | O | S | 0 | 0 |
| | | | 827 | 539 | 148 | 134 | 6 | | |

- Molecule 26 is a protein called Small ribosomal subunit protein eS12.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 26 | SM | 122 | Total | C | N | O | S | 0 | 0 |
| | | | 940 | 590 | 164 | 177 | 9 | | |

- Molecule 27 is a protein called Small ribosomal subunit protein uS19.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 27 | SP | 121 | Total | C | N | O | S | 0 | 0 |
| | | | 985 | 623 | 185 | 170 | 7 | | |

- Molecule 28 is a protein called Small ribosomal subunit protein uS9.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 28 | SQ | 144 | Total | C | N | O | S | 0 | 0 |
| | | | 1142 | 726 | 216 | 197 | 3 | | |

- Molecule 29 is a protein called 40S ribosomal protein S18.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 29 | SS | 145 | Total | C | N | O | S | 0 | 0 |
| | | | 1198 | 751 | 242 | 203 | 2 | | |

- Molecule 30 is a protein called 40S ribosomal protein S19.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 30 | ST | 143 | Total | C | N | O | S | 0 | 0 |
| | | | 1112 | 697 | 214 | 198 | 3 | | |

- Molecule 31 is a protein called 40S ribosomal protein S20.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 31 | SU | 104 | Total | C | N | O | S | 0 | 0 |
| | | | 821 | 514 | 155 | 148 | 4 | | |

- Molecule 32 is a protein called Small ribosomal subunit protein eS25.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 32 | SZ | 75 | Total | C | N | O | S | 0 | 0 |
| | | | 598 | 382 | 111 | 104 | 1 | | |

- Molecule 33 is a protein called 40S ribosomal protein S28.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 33 | Sc | 64 | Total | C | N | O | S | 0 | 0 |
| | | | 506 | 308 | 102 | 94 | 2 | | |

- Molecule 34 is a protein called 40S ribosomal protein S29.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 34 | Sd | 55 | Total | C | N | O | S | 0 | 0 |
| | | | 459 | 286 | 94 | 74 | 5 | | |

- Molecule 35 is a protein called Ubiquitin-40S ribosomal protein S27a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 35 | Sf | 67 | Total | C | N | O | S | 0 | 0 |
| | | | 548 | 346 | 102 | 93 | 7 | | |

- Molecule 36 is a protein called Receptor of activated protein C kinase 1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 36 | Sg | 313 | Total | C | N | O | S | 0 | 0 |
| | | | 2436 | 1535 | 424 | 465 | 12 | | |

- Molecule 37 is a RNA chain called A site tRNA [Homo sapiens].

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 37 | At | 71 | Total | C | N | O | P | 0 | 0 |
| | | | 1514 | 677 | 275 | 492 | 70 | | |

- Molecule 38 is a RNA chain called P site tRNA [Homo sapiens].

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 38 | Pt | 74 | Total | C | N | O | P | 0 | 0 |
| | | | 1576 | 705 | 286 | 512 | 73 | | |

- Molecule 39 is a protein called Transcription factor BTF3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 39 | CI | 31 | Total | C | N | O | S | 0 | 0 |
| | | | 247 | 153 | 55 | 38 | 1 | | |

- Molecule 40 is a RNA chain called 28S rRNA [Homo sapiens].

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 40 | L5 | 3655 | Total | C | N | O | P | 1 | 0 |
| | | | 78444 | 34968 | 14346 | 25475 | 3655 | | |

- Molecule 41 is a RNA chain called 5S rRNA [Homo sapiens].

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 41 | L7 | 120 | Total | C | N | O | P | 0 | 0 |
| | | | 2561 | 1141 | 456 | 844 | 120 | | |

- Molecule 42 is a RNA chain called 5.8S rRNA [Homo sapiens].

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 42 | L8 | 156 | Total | C | N | O | P | 0 | 0 |
| | | | 3315 | 1481 | 585 | 1094 | 155 | | |

- Molecule 43 is a protein called 60S ribosomal protein L8.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 43 | LA | 248 | Total | C | N | O | S | 0 | 0 |
| | | | 1898 | 1189 | 389 | 314 | 6 | | |

- Molecule 44 is a protein called Large ribosomal subunit protein uL3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 44 | LB | 402 | Total | C | N | O | S | 0 | 0 |
| | | | 3238 | 2060 | 608 | 556 | 14 | | |

- Molecule 45 is a protein called 60S ribosomal protein L4.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 45 | LC | 368 | Total | C | N | O | S | 0 | 0 |
| | | | 2927 | 1840 | 583 | 489 | 15 | | |

- Molecule 46 is a protein called Large ribosomal subunit protein uL18.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 46 | LD | 293 | Total | C | N | O | S | 0 | 0 |
| | | | 2382 | 1507 | 434 | 427 | 14 | | |

- Molecule 47 is a protein called Large ribosomal subunit protein eL6.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 47 | LE | 240 | Total | C | N | O | S | 0 | 0 |
| | | | 1935 | 1242 | 368 | 321 | 4 | | |

- Molecule 48 is a protein called 60S ribosomal protein L7.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 48 | LF | 225 | Total | C | N | O | S | 0 | 0 |
| | | | 1870 | 1202 | 358 | 301 | 9 | | |

- Molecule 49 is a protein called 60S ribosomal protein L7a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 49 | LG | 241 | Total | C | N | O | S | 0 | 0 |
| | | | 1927 | 1228 | 371 | 324 | 4 | | |

- Molecule 50 is a protein called 60S ribosomal protein L9.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 50 | LH | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1518 | 956 | 284 | 272 | 6 | | |

- Molecule 51 is a protein called Ribosomal protein uL16-like.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 51 | LI | 213 | Total | C | N | O | S | 0 | 0 |
| | | | 1711 | 1082 | 329 | 285 | 15 | | |

- Molecule 52 is a protein called 60S ribosomal protein L11.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 52 | LJ | 170 | Total | C | N | O | S | 0 | 0 |
| | | | 1362 | 861 | 254 | 241 | 6 | | |

- Molecule 53 is a protein called Large ribosomal subunit protein eL13.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 53 | LL | 210 | Total | C | N | O | S | 0 | 0 |
| | | | 1701 | 1064 | 352 | 281 | 4 | | |

- Molecule 54 is a protein called 60S ribosomal protein L14.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 54 | LM | 139 | Total | C | N | O | S | 0 | 0 |
| | | | 1138 | 730 | 218 | 183 | 7 | | |

- Molecule 55 is a protein called 60S ribosomal protein L15.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 55 | LN | 203 | Total | C | N | O | S | 0 | 0 |
| | | | 1701 | 1072 | 359 | 266 | 4 | | |

- Molecule 56 is a protein called 60S ribosomal protein L13a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 56 | LO | 201 | Total | C | N | O | S | 0 | 0 |
| | | | 1650 | 1063 | 321 | 261 | 5 | | |

- Molecule 57 is a protein called 60S ribosomal protein L17.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 57 | LP | 153 | Total | C | N | O | S | 0 | 0 |
| | | | 1242 | 776 | 241 | 216 | 9 | | |

- Molecule 58 is a protein called 60S ribosomal protein L18.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 58 | LQ | 187 | Total | C | N | O | S | 0 | 0 |
| | | | 1513 | 944 | 314 | 250 | 5 | | |

- Molecule 59 is a protein called 60S ribosomal protein L18a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 59 | LS | 175 | Total | C | N | O | S | 0 | 0 |
| | | | 1453 | 925 | 283 | 235 | 10 | | |

- Molecule 60 is a protein called 60S ribosomal protein L21.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 60 | LT | 159 | Total | C | N | O | S | 0 | 0 |
| | | | 1298 | 823 | 252 | 217 | 6 | | |

- Molecule 61 is a protein called Heparin-binding protein HBp15.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 61 | LU | 101 | Total | C | N | O | S | 0 | 0 |
| | | | 825 | 529 | 144 | 150 | 2 | | |

- Molecule 62 is a protein called 60S ribosomal protein L23.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 62 | LV | 131 | Total | C | N | O | S | 0 | 0 |
| | | | 979 | 618 | 184 | 172 | 5 | | |

- Molecule 63 is a protein called 60S ribosomal protein L23a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 63 | LX | 120 | Total | C | N | O | S | 0 | 0 |
| | | | 985 | 630 | 185 | 169 | 1 | | |

- Molecule 64 is a protein called 60S ribosomal protein L26.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 64 | LY | 134 | Total | C | N | O | S | 0 | 0 |
| | | | 1115 | 700 | 226 | 186 | 3 | | |

- Molecule 65 is a protein called 60S ribosomal protein L27.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 65 | LZ | 135 | Total | C | N | O | S | 0 | 0 |
| | | | 1107 | 714 | 208 | 182 | 3 | | |

- Molecule 66 is a protein called 60S ribosomal protein L27a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 66 | La | 147 | Total | C | N | O | S | 0 | 0 |
| | | | 1162 | 736 | 237 | 186 | 3 | | |

- Molecule 67 is a protein called Large ribosomal subunit protein eL29.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 67 | Lb | 109 | Total | C | N | O | S | 0 | 0 |
| | | | 876 | 546 | 189 | 137 | 4 | | |

- Molecule 68 is a protein called 60S ribosomal protein L30.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 68 | Lc | 98 | Total | C | N | O | S | 0 | 0 |
| | | | 764 | 485 | 135 | 138 | 6 | | |

- Molecule 69 is a protein called 60S ribosomal protein L31.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 69 | Ld | 107 | Total | C | N | O | S | 0 | 0 |
| | | | 888 | 560 | 171 | 155 | 2 | | |

- Molecule 70 is a protein called 60S ribosomal protein L32.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 70 | Le | 128 | Total | C | N | O | S | 0 | 0 |
| | | | 1053 | 667 | 216 | 165 | 5 | | |

- Molecule 71 is a protein called 60S ribosomal protein L35a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 71 | Lf | 109 | Total | C | N | O | S | 0 | 0 |
| | | | 876 | 555 | 174 | 144 | 3 | | |

- Molecule 72 is a protein called 60S ribosomal protein L34.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 72 | Lg | 114 | Total | C | N | O | S | 0 | 0 |
| | | | 906 | 566 | 187 | 147 | 6 | | |

- Molecule 73 is a protein called 60S ribosomal protein L35.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 73 | Lh | 122 | Total | C | N | O | S | 0 | 0 |
| | | | 1015 | 641 | 205 | 168 | 1 | | |

- Molecule 74 is a protein called 60S ribosomal protein L36.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 74 | Li | 102 | Total | C | N | O | S | 0 | 0 |
| | | | 832 | 521 | 177 | 129 | 5 | | |

- Molecule 75 is a protein called 60S ribosomal protein L37.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 75 | Lj | 86 | Total | C | N | O | S | 0 | 0 |
| | | | 705 | 434 | 155 | 111 | 5 | | |

- Molecule 76 is a protein called 60S ribosomal protein L38.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 76 | Lk | 69 | Total | C | N | O | S | 0 | 0 |
| | | | 569 | 366 | 103 | 99 | 1 | | |

- Molecule 77 is a protein called 60S ribosomal protein L39.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 77 | Ll | 50 | Total | C | N | O | S | 0 | 0 |
| | | | 444 | 281 | 98 | 64 | 1 | | |

- Molecule 78 is a protein called Large ribosomal subunit protein eL40.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 78 | Lm | 52 | Total | C | N | O | S | 0 | 0 |
| | | | 429 | 266 | 90 | 67 | 6 | | |

- Molecule 79 is a protein called 60S ribosomal protein L41.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 79 | Ln | 24 | Total | C | N | O | S | 0 | 0 |
| | | | 230 | 139 | 62 | 26 | 3 | | |

- Molecule 80 is a protein called 60S ribosomal protein L36a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 80 | Lo | 105 | Total | C | N | O | S | 0 | 0 |
| | | | 862 | 542 | 175 | 139 | 6 | | |

- Molecule 81 is a protein called 60S ribosomal protein L37a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 81 | Lp | 91 | Total | C | N | O | S | 0 | 0 |
| | | | 708 | 445 | 136 | 120 | 7 | | |

- Molecule 82 is a protein called 60S ribosomal protein L28.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 82 | Lr | 125 | Total | C | N | O | S | 0 | 0 |
| | | | 1002 | 622 | 207 | 168 | 5 | | |

- Molecule 83 is a protein called 60S acidic ribosomal protein P0.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 83 | Ls | 196 | Total | C | N | O | S | 0 | 0 |
| | | | 1496 | 952 | 259 | 276 | 9 | | |

- Molecule 84 is a protein called Large ribosomal subunit protein uL11.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 84 | Lt | 134 | Total | C | N | O | S | 0 | 0 |
| | | | 998 | 626 | 180 | 189 | 3 | | |

- Molecule 85 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

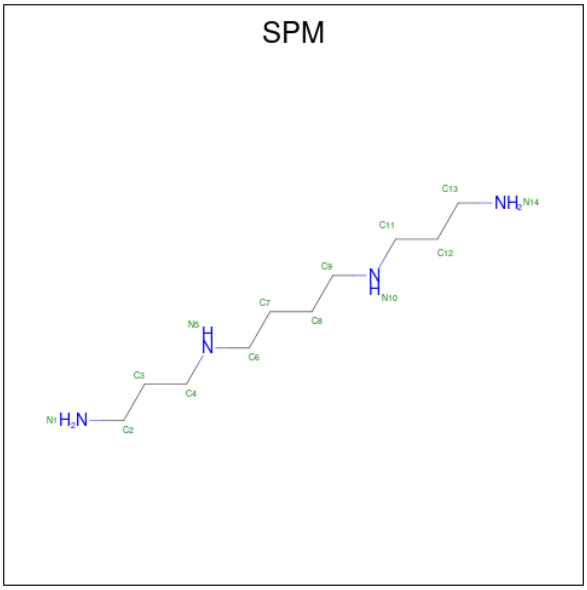
| Mol | Chain | Residues | Atoms | | AltConf |
|---|---|---|---|---|---|
| 85 | Sa | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 85 | Lg | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 85 | Lj | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 85 | Lm | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 85 | Lo | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 85 | Lp | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |

- Molecule 86 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

| Mol | Chain | Residues | Atoms | | AltConf |
|---|---|---|---|---|---|
| 86 | S2 | 27 | Total | Mg | 0 |
| | | | 27 | 27 | |
| 86 | SS | 1 | Total | Mg | 0 |
| | | | 1 | 1 | |
| 86 | L5 | 178 | Total | Mg | 0 |
| | | | 178 | 178 | |
| 86 | L7 | 3 | Total | Mg | 0 |
| | | | 3 | 3 | |
| 86 | L8 | 6 | Total | Mg | 0 |
| | | | 6 | 6 | |
| 86 | LA | 1 | Total | Mg | 0 |
| | | | 1 | 1 | |
| 86 | LP | 1 | Total | Mg | 0 |
| | | | 1 | 1 | |
| 86 | LV | 1 | Total | Mg | 0 |
| | | | 1 | 1 | |
| 86 | Le | 1 | Total | Mg | 0 |
| | | | 1 | 1 | |

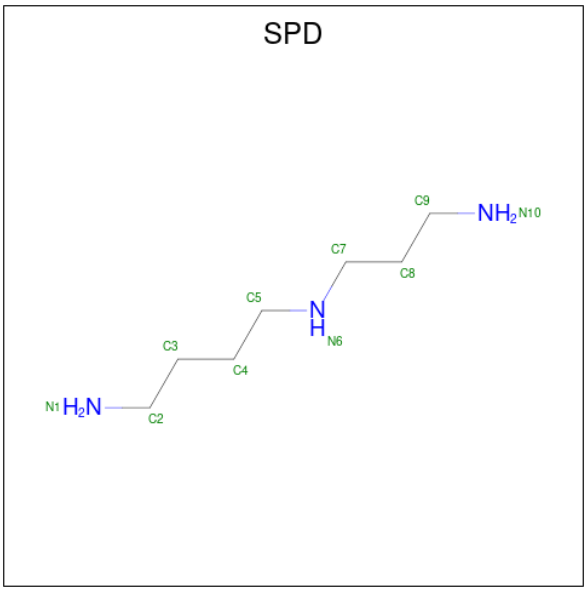
- Molecule 87 is SPERMINE (CCD ID: SPM) (formula: $C_{10}H_{26}N_4$) (labeled as "Ligand of

Interest" by depositor).



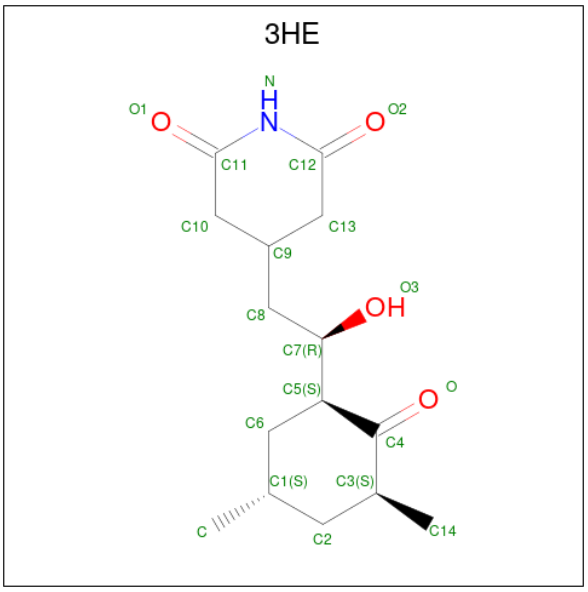

| Mol | Chain | Residues | Atoms | AltConf |
|---|---|---|---|---|
| 87 | L5 | 1 | Total C N<br>14 10 4 | 0 |
| 87 | L5 | 1 | Total C N<br>14 10 4 | 0 |
| 87 | L5 | 1 | Total C N<br>14 10 4 | 0 |
| 87 | L5 | 1 | Total C N<br>14 10 4 | 0 |
| 87 | L5 | 1 | Total C N<br>14 10 4 | 0 |
| 87 | L5 | 1 | Total C N<br>14 10 4 | 0 |
| 87 | L5 | 1 | Total C N<br>14 10 4 | 0 |

- Molecule 88 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$) (labeled as "Ligand of Interest" by depositor).



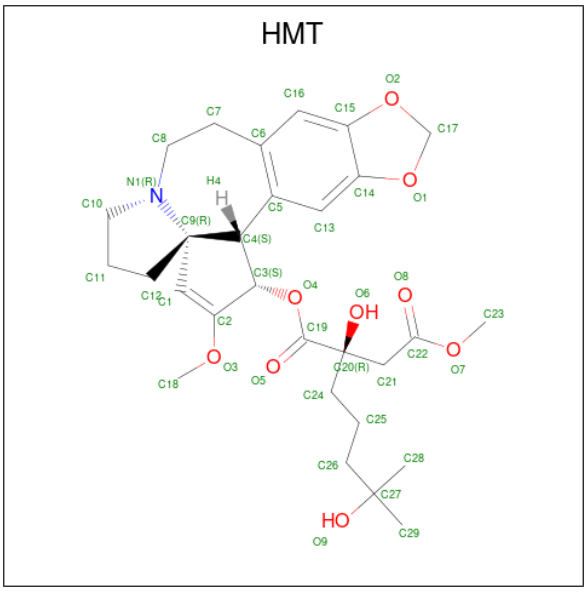

| Mol | Chain | Residues | Atoms | AltConf |
|---|---|---|---|---|
| 88 | L5 | 1 | Total C N<br>10 7 3 | 0 |
| 88 | L5 | 1 | Total C N<br>10 7 3 | 0 |
| 88 | L5 | 1 | Total C N<br>10 7 3 | 0 |
| 88 | L5 | 1 | Total C N<br>10 7 3 | 0 |
| 88 | L5 | 1 | Total C N<br>10 7 3 | 0 |
| 88 | L5 | 1 | Total C N<br>10 7 3 | 0 |
| 88 | L5 | 1 | Total C N<br>10 7 3 | 0 |
| 88 | L5 | 1 | Total C N<br>10 7 3 | 0 |
| 88 | L5 | 1 | Total C N<br>10 7 3 | 0 |
| 88 | L8 | 1 | Total C N<br>10 7 3 | 0 |

- Molecule 89 is 4-{(2R)-2-[(1S,3S,5S)-3,5-dimethyl-2-oxocyclohexyl]-2-hydroxyethyl}piperidine-2,6-dione (CCD ID: 3HE) (formula: $C_{15}H_{23}NO_4$) (labeled as "Ligand of Interest" by depositor).




| Mol | Chain | Residues | Atoms | | | | AltConf |
|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | |
| 89 | L5 | 1 | 20 | 15 | 1 | 4 | 0 |

- Molecule 90 is (3beta)-O 3 -[(2R)-2,6-dihydroxy-2-(2-methoxy-2-oxoethyl)-6-methylheptan oyl]cephalotaxine (CCD ID: HMT) (formula: $C_{29}H_{39}NO_9$) (labeled as "Ligand of Interest" by depositor).



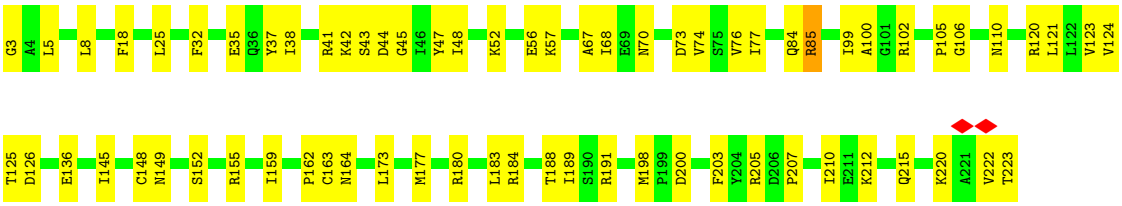

| Mol | Chain | Residues | Atoms | | | | AltConf |
|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | |
| 90 | L5 | 1 | 39 | 29 | 1 | 9 | 0 |

# 3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

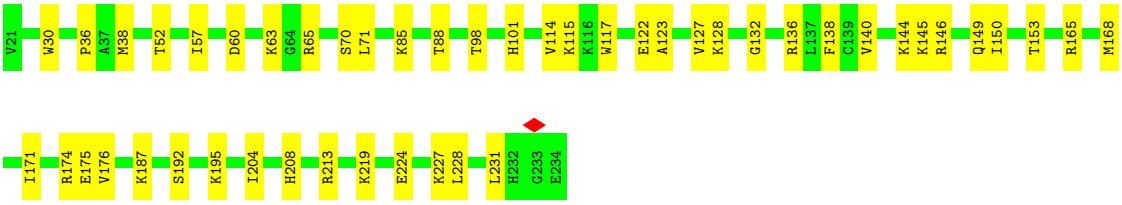
• Molecule 1: 40S ribosomal protein SA

Chain SA:



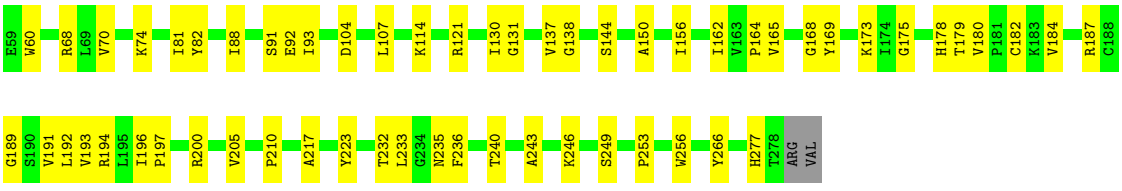

• Molecule 2: 40S ribosomal protein S3a

Chain SB:



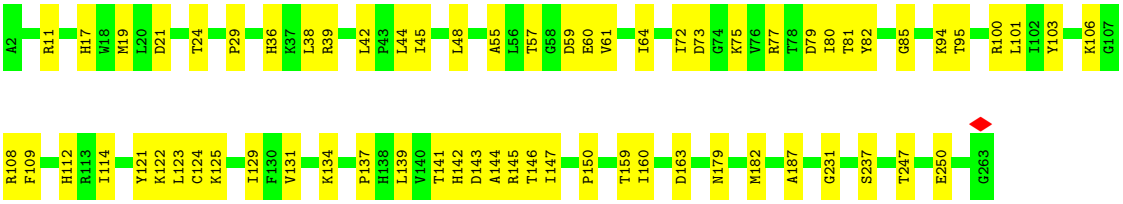

• Molecule 3: 40S ribosomal protein S2

Chain SC:



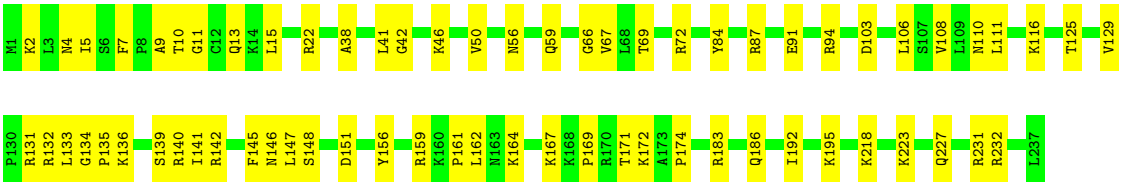

• Molecule 4: Small ribosomal subunit protein eS4, X isoform

Chain SE:



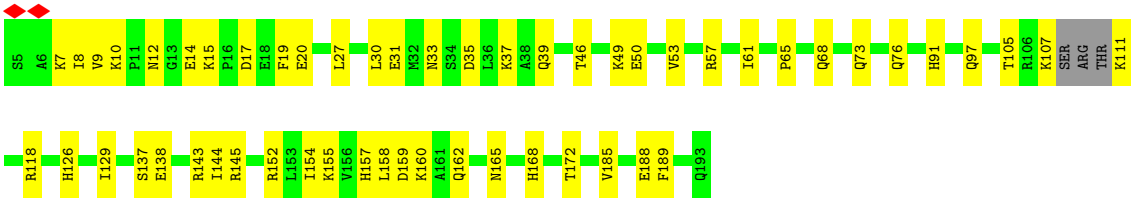

• Molecule 5: 40S ribosomal protein S6

Chain SG:



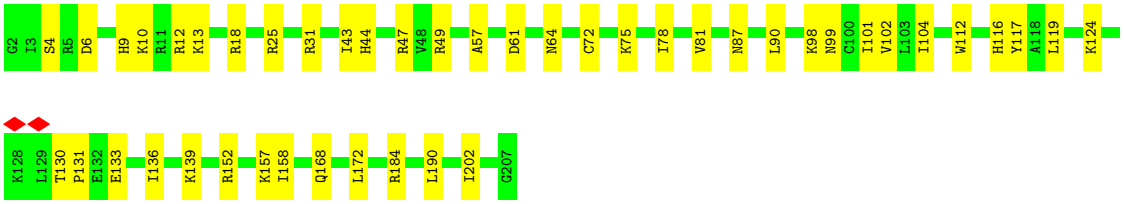

• Molecule 6: Small ribosomal subunit protein eS7

Chain SH:



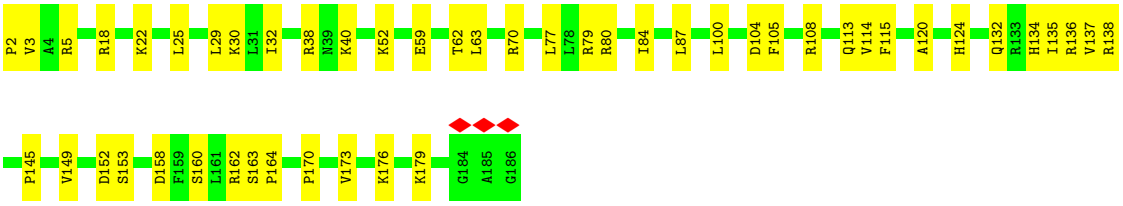

• Molecule 7: 40S ribosomal protein S8

Chain SI:



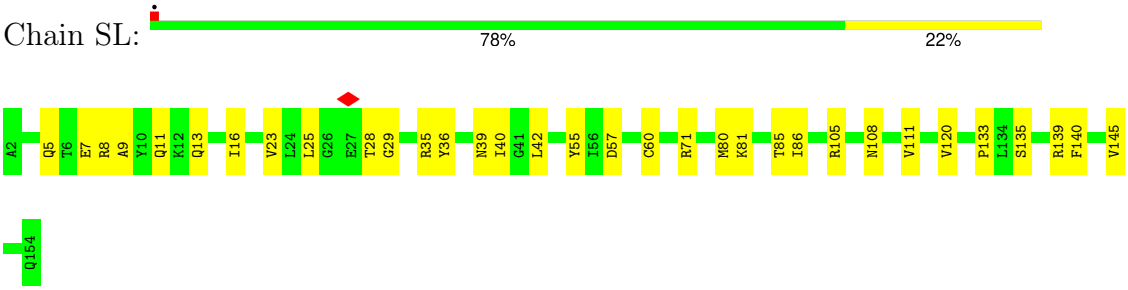

• Molecule 8: 40S ribosomal protein S9

Chain SJ:



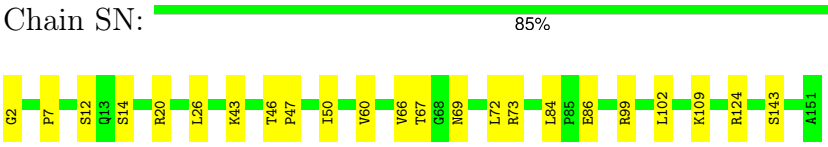

• Molecule 9: 40S ribosomal protein S11

Chain SL:



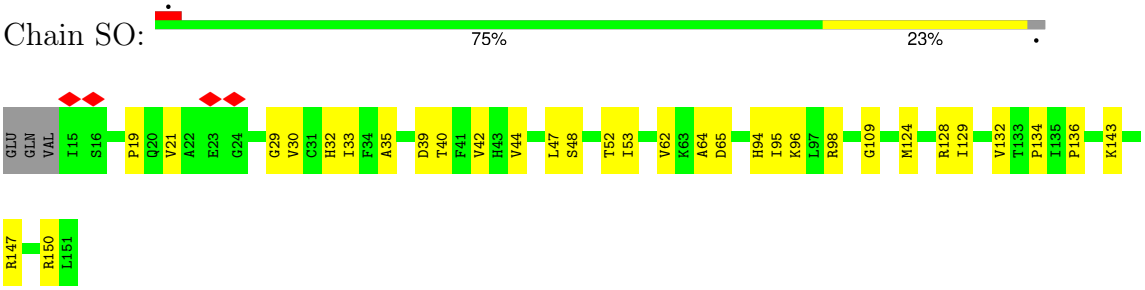

• Molecule 10: 40S ribosomal protein S13

Chain SN:



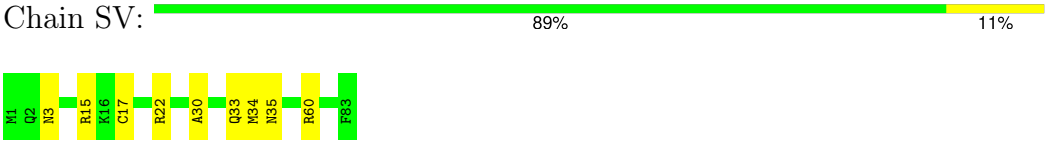

• Molecule 11: Small ribosomal subunit protein uS11

Chain SO:



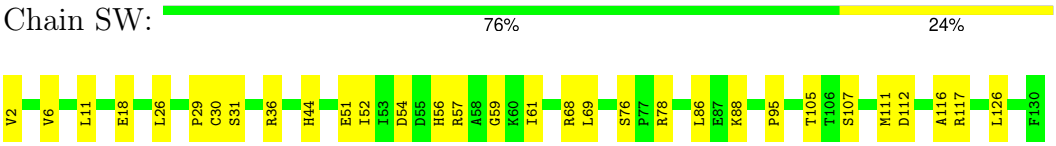

• Molecule 12: Small ribosomal subunit protein eS21

Chain SV:



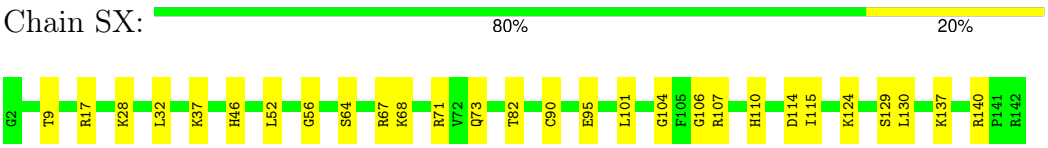

• Molecule 13: 40S ribosomal protein S15a

Chain SW:



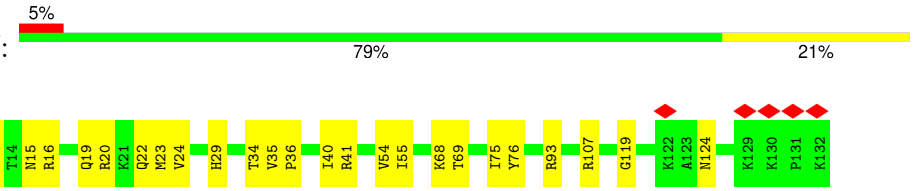

• Molecule 14: 40S ribosomal protein S23

Chain SX:



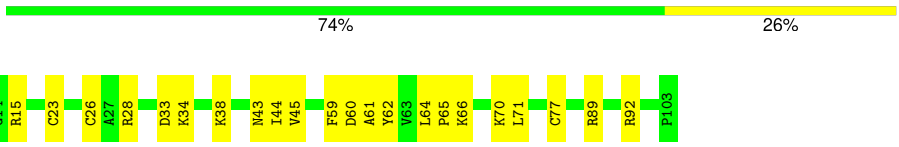

• Molecule 15: 40S ribosomal protein S24

Chain SY:



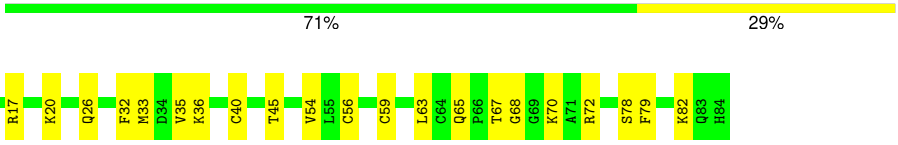

• Molecule 16: 40S ribosomal protein S26

Chain Sa:



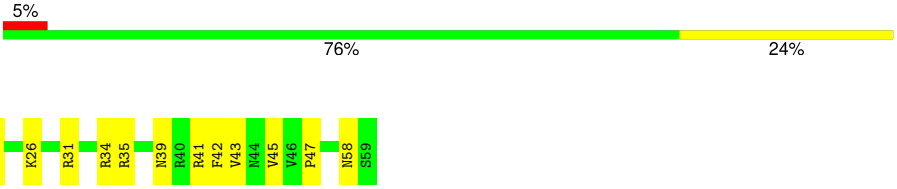

• Molecule 17: Small ribosomal subunit protein eS27

Chain Sb:



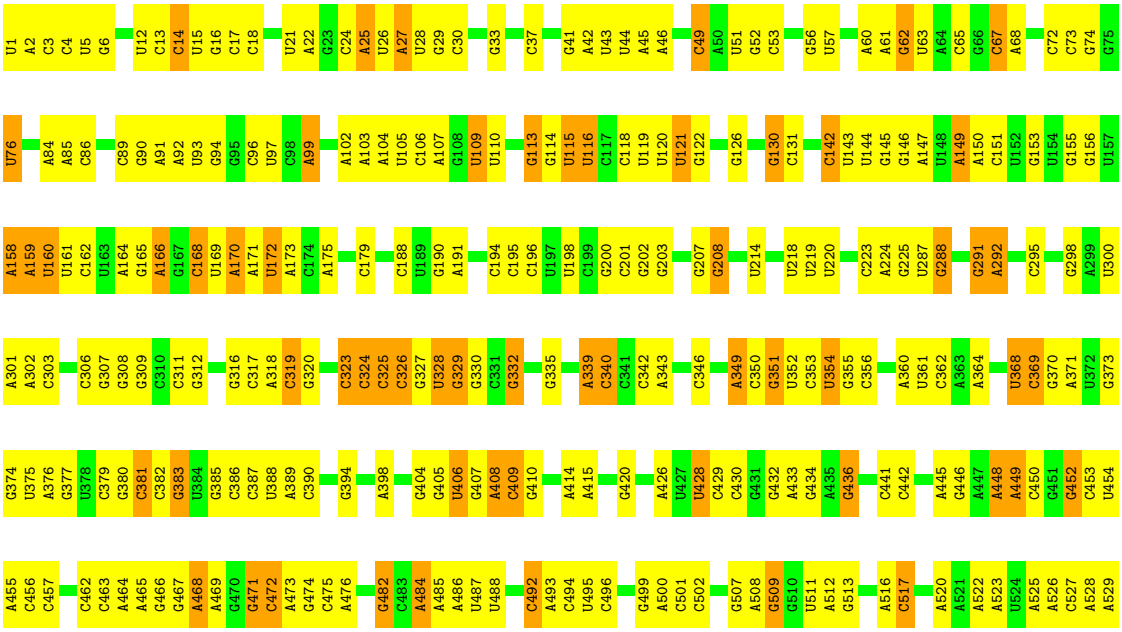

• Molecule 18: Small ribosomal subunit protein eS30

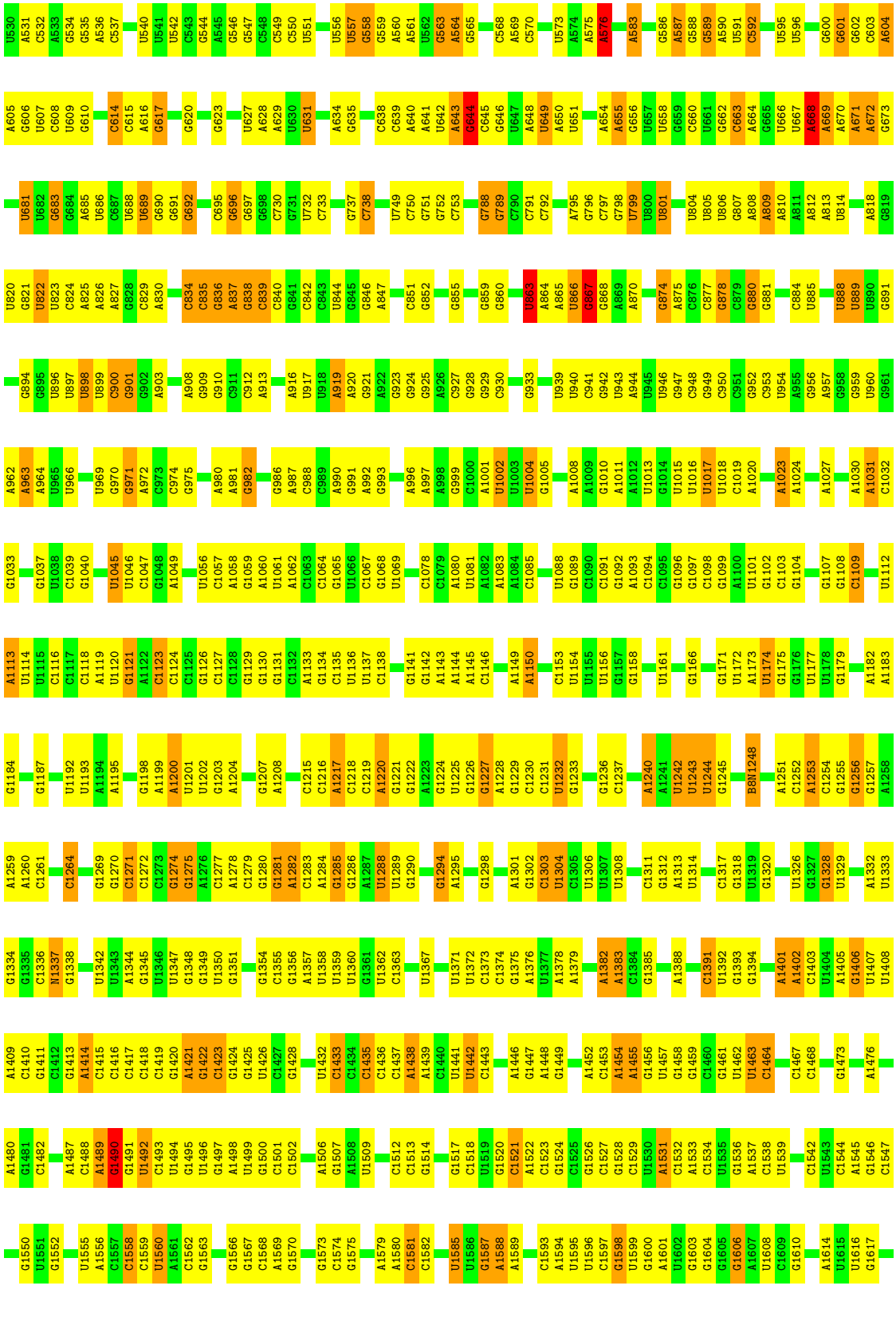
Chain Se:

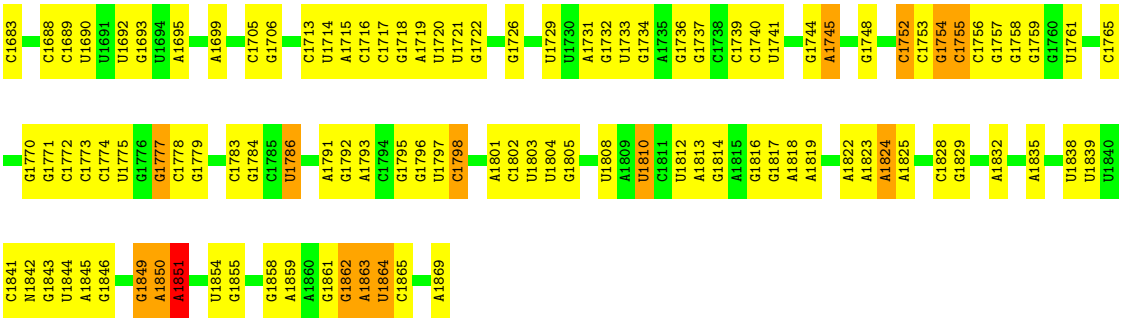



• Molecule 19: 18S rRNA [Homo sapiens]

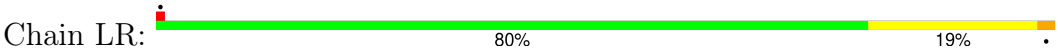
Chain S2:

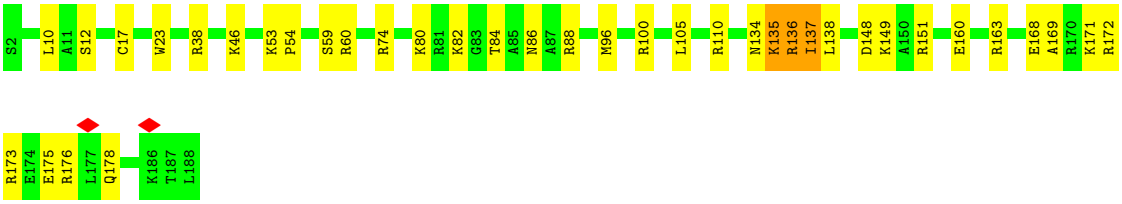




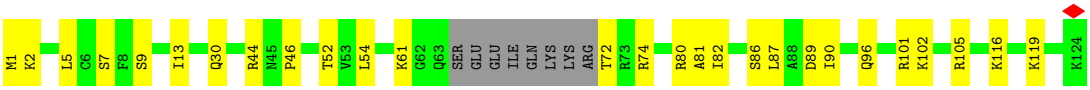



• Molecule 20: 60S ribosomal protein L19

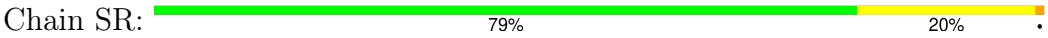


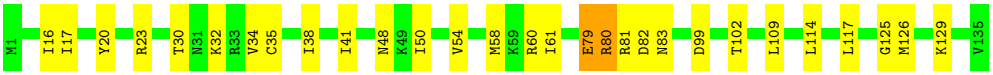




• Molecule 21: Ribosomal protein L24

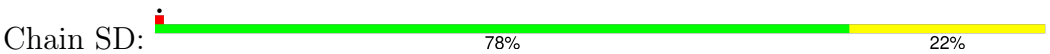


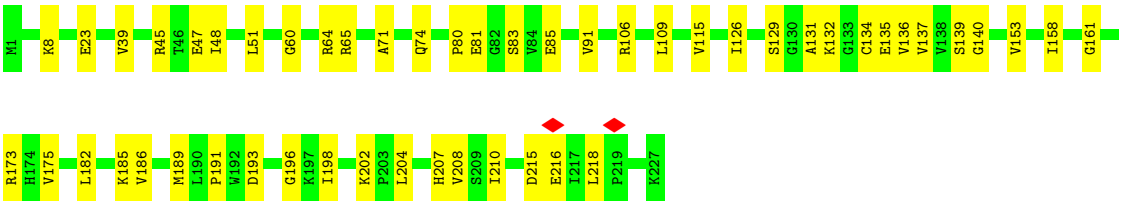

• Molecule 22: Small ribosomal subunit protein eS17



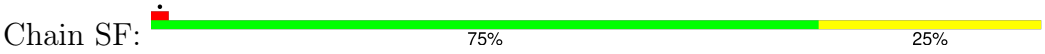



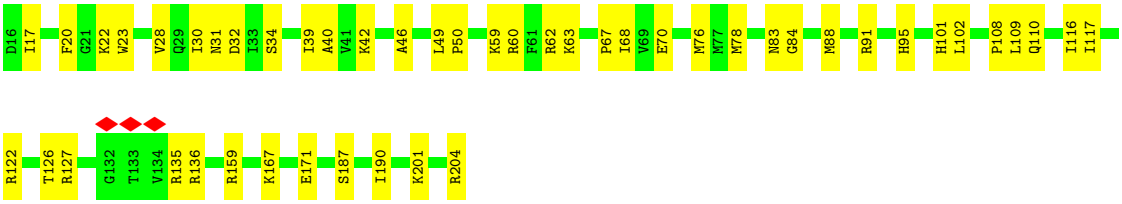

• Molecule 23: Small ribosomal subunit protein uS3



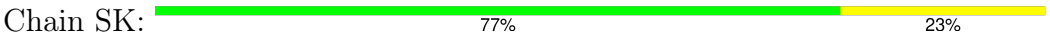



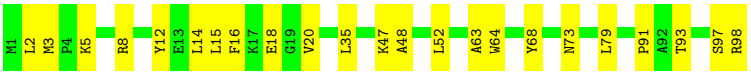

• Molecule 24: 40S ribosomal protein S5



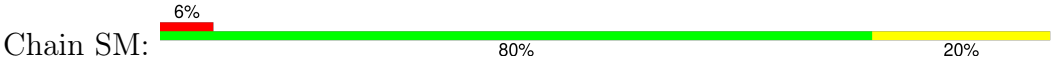


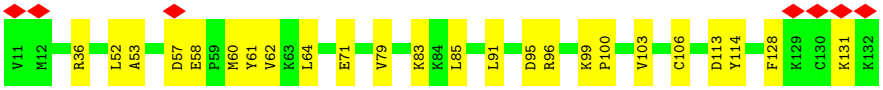

• Molecule 25: 40S ribosomal protein S10



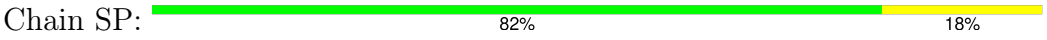




• Molecule 26: Small ribosomal subunit protein eS12



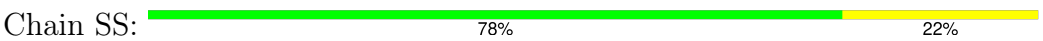



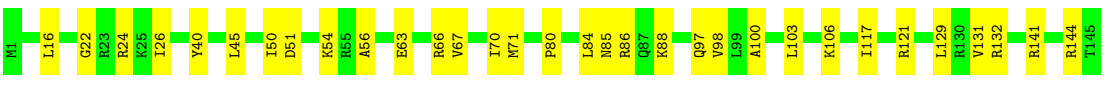

• Molecule 27: Small ribosomal subunit protein uS19



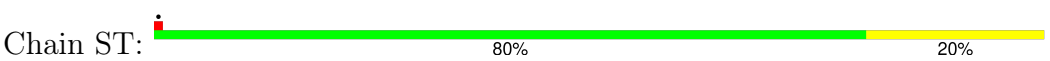
• Molecule 28: Small ribosomal subunit protein uS9

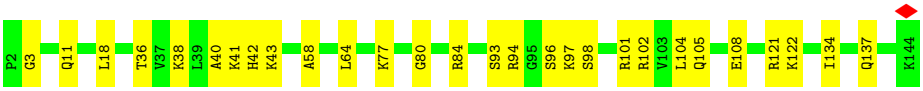
• Molecule 29: 40S ribosomal protein S18




• Molecule 30: 40S ribosomal protein S19






• Molecule 31: 40S ribosomal protein S20

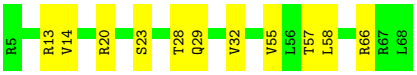
Chain SU:

• Molecule 32: Small ribosomal subunit protein eS25

Chain SZ:

• Molecule 33: 40S ribosomal protein S28

Chain Sc:

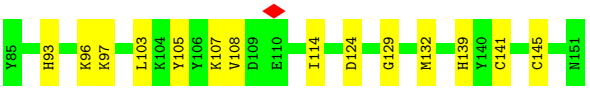



• Molecule 34: 40S ribosomal protein S29

Chain Sd:

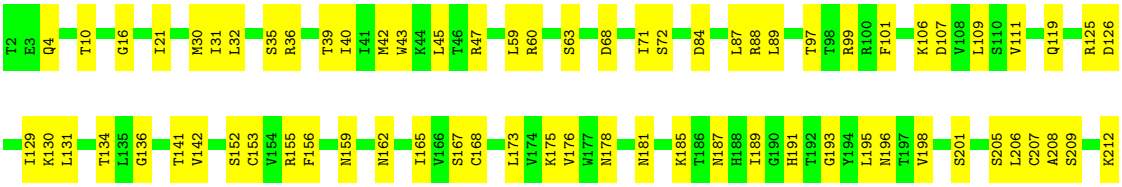
• Molecule 35: Ubiquitin-40S ribosomal protein S27a

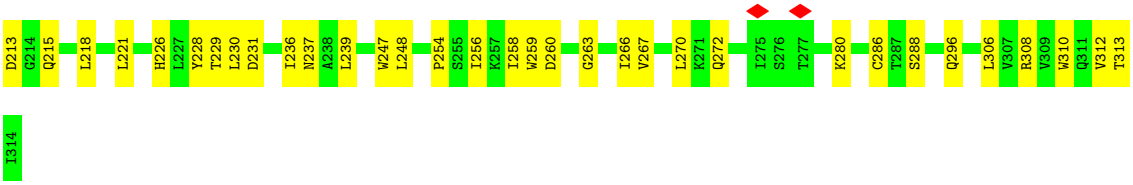
Chain Sf:



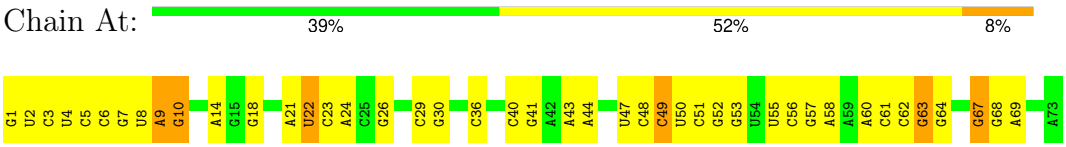

• Molecule 36: Receptor of activated protein C kinase 1

Chain Sg:

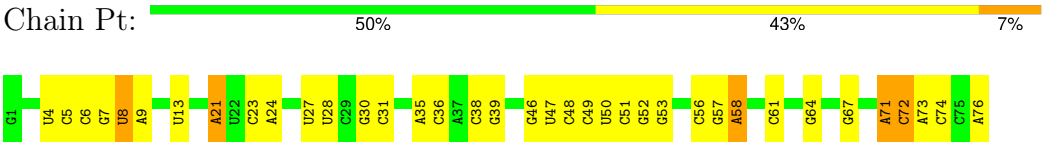




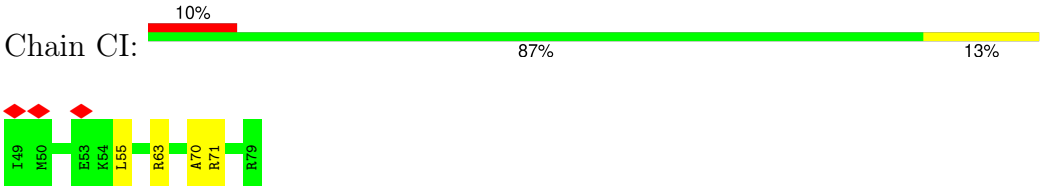

• Molecule 37: A site tRNA [Homo sapiens]



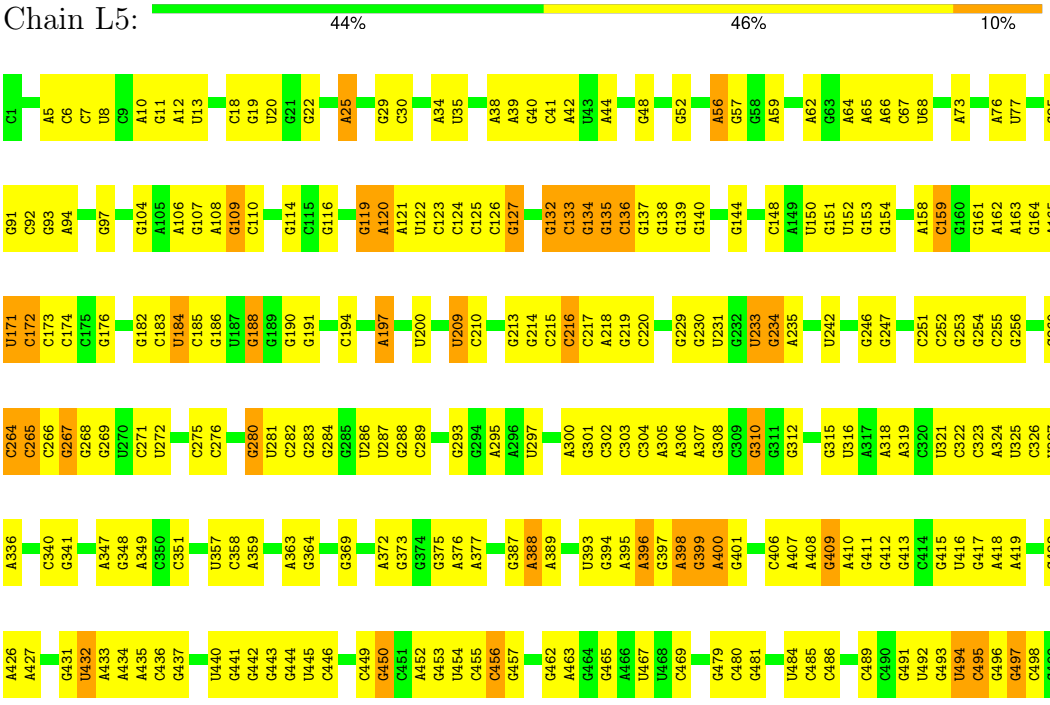

• Molecule 38: P site tRNA [Homo sapiens]

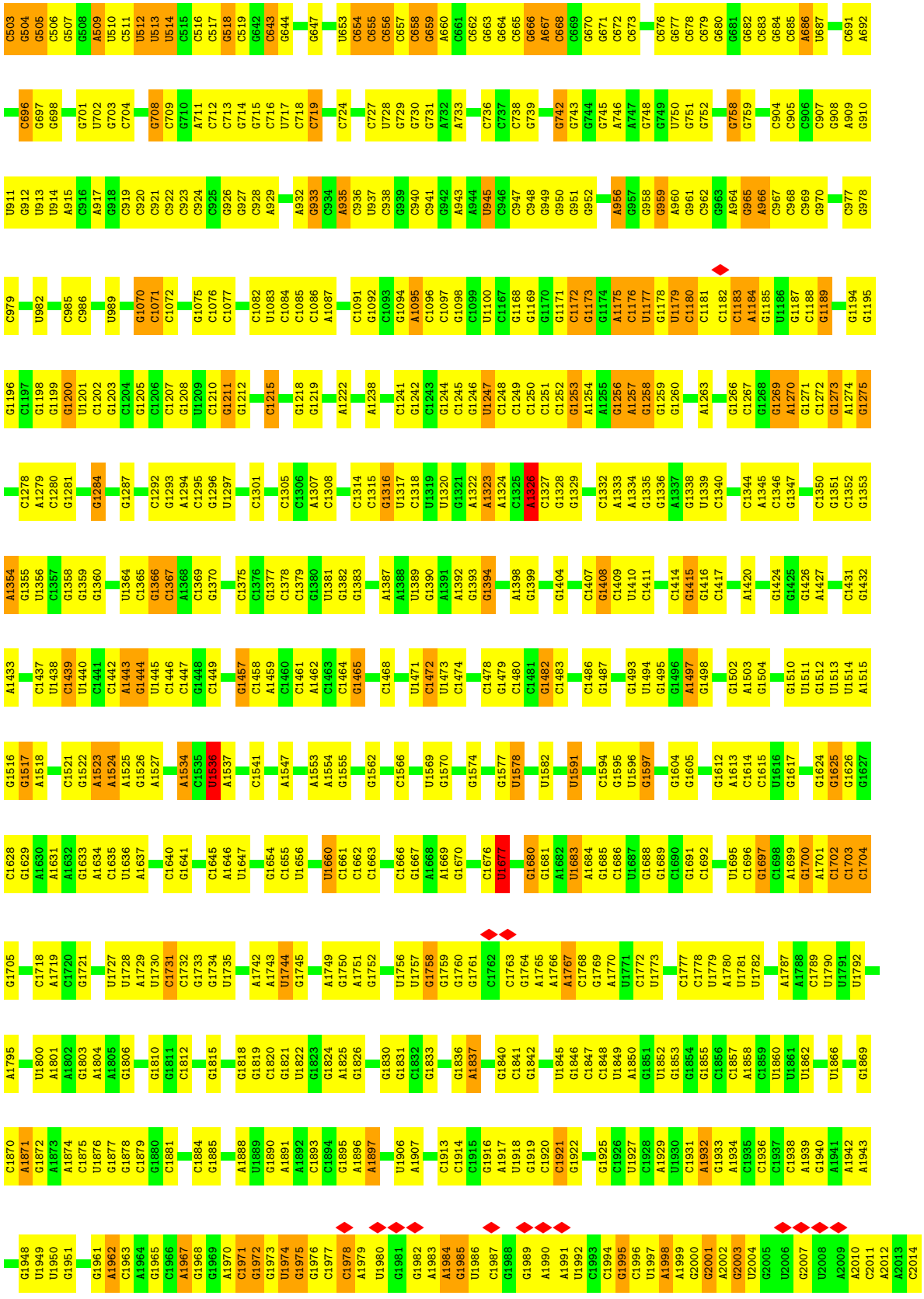


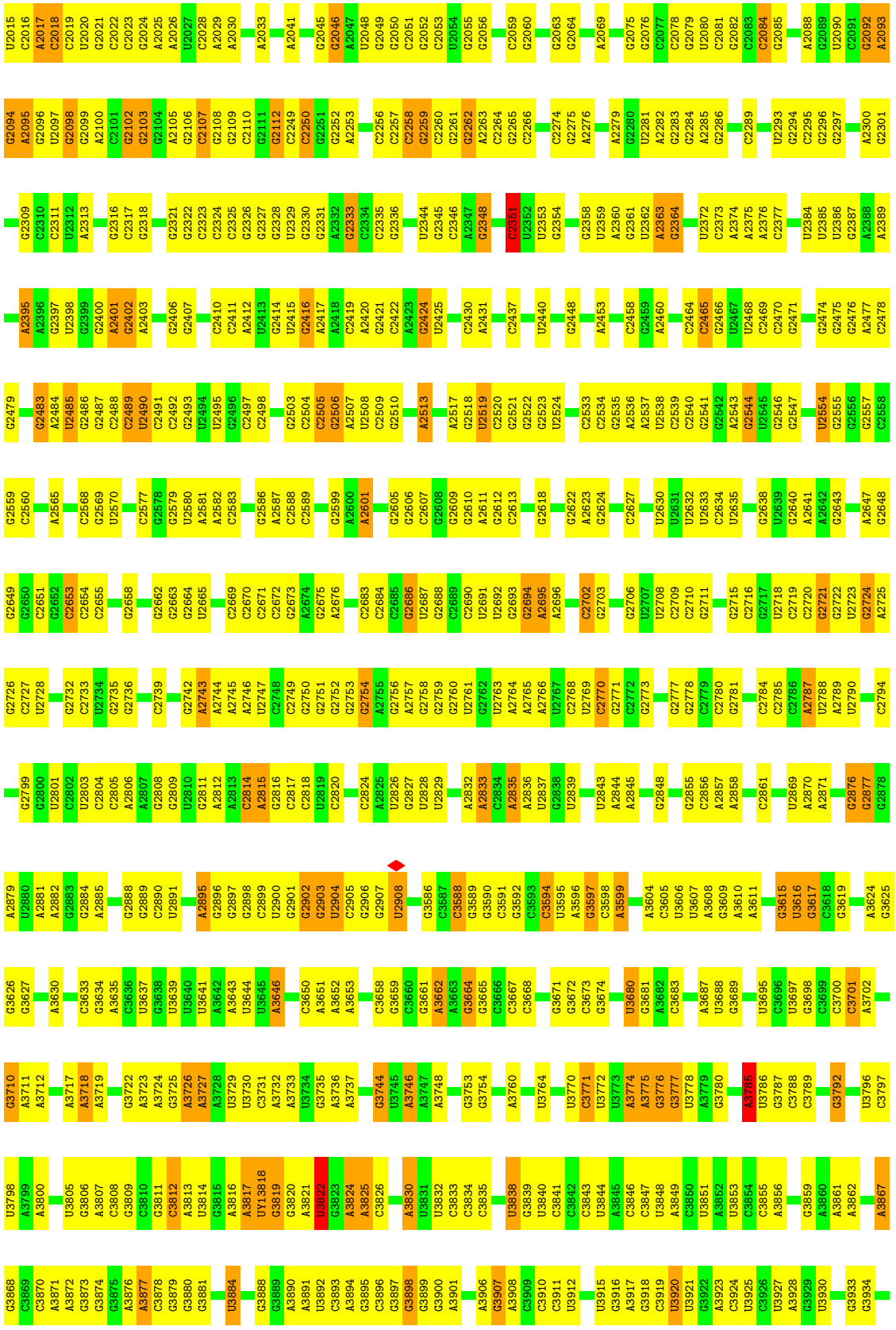

• Molecule 39: Transcription factor BTF3

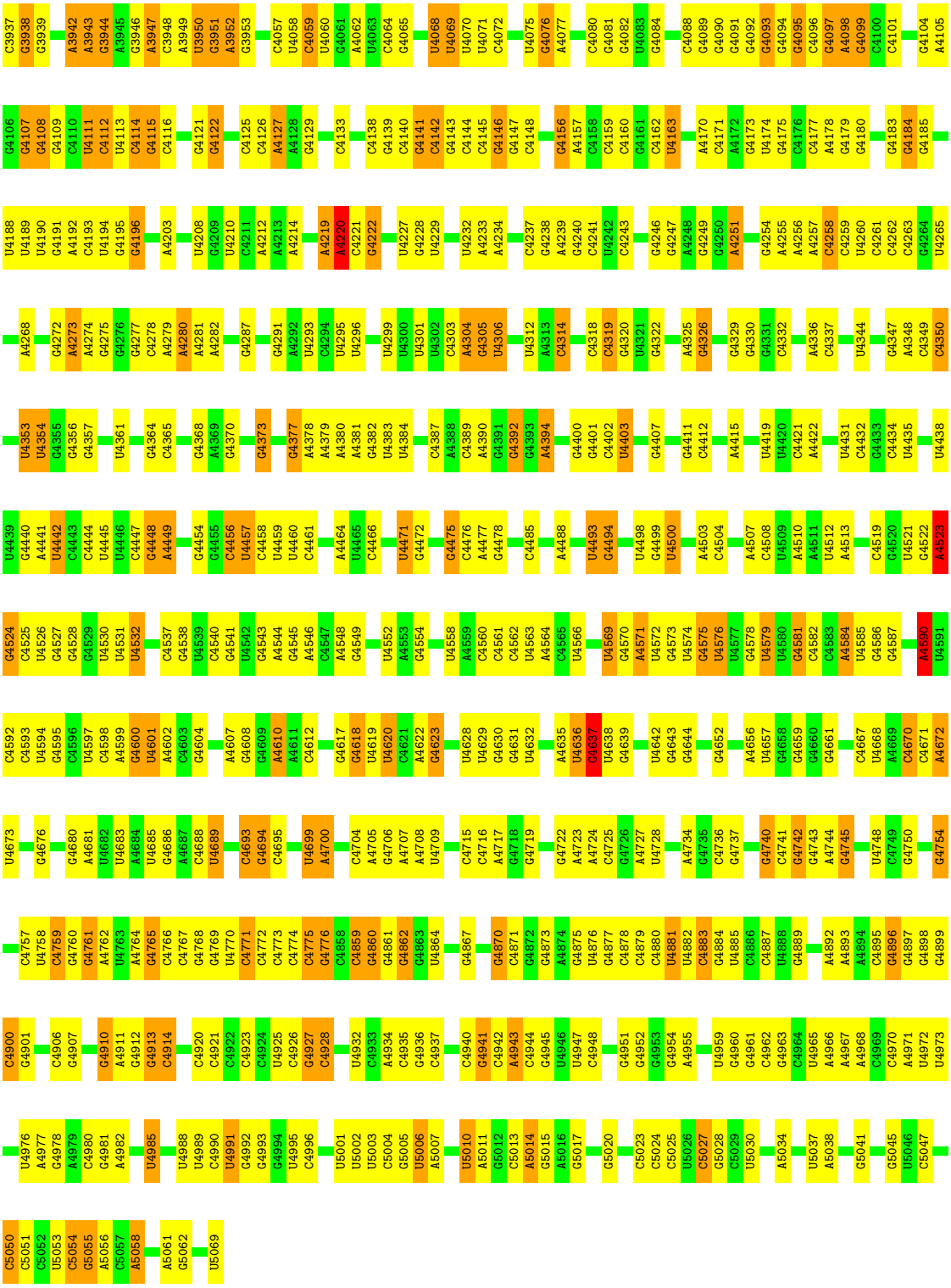



• Molecule 40: 28S rRNA [Homo sapiens]



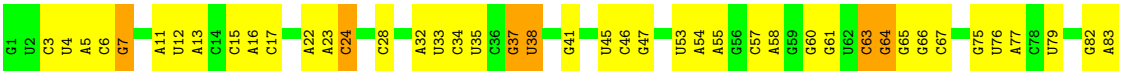


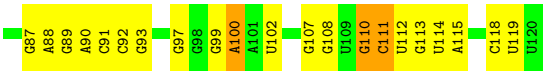




• Molecule 41: 5S rRNA [Homo sapiens]

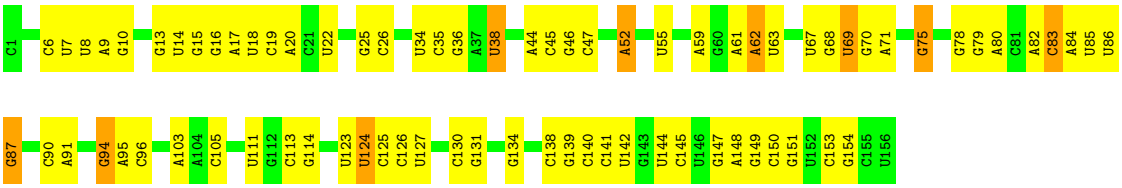
Chain L7:





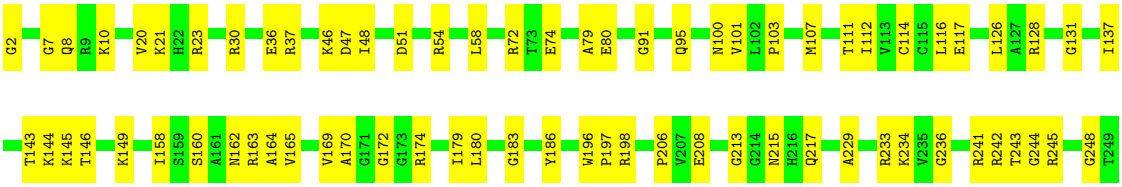

• Molecule 42: 5.8S rRNA [Homo sapiens]

Chain L8:



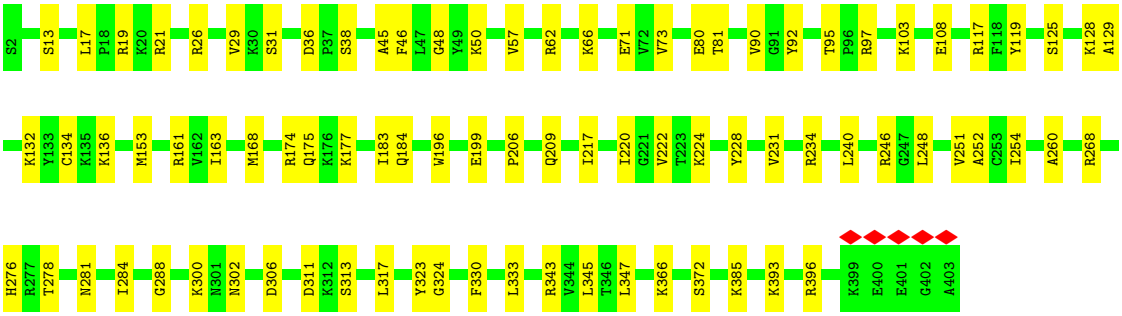

• Molecule 43: 60S ribosomal protein L8

Chain LA:



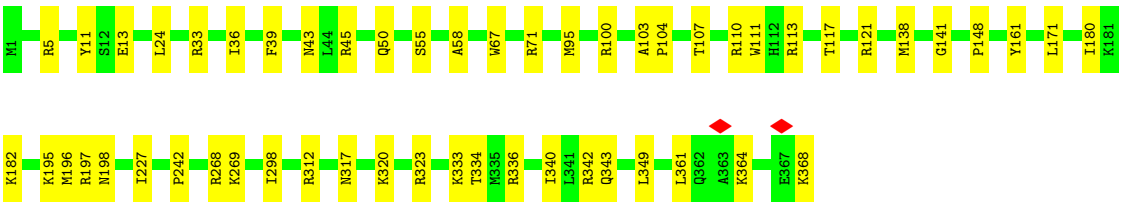

• Molecule 44: Large ribosomal subunit protein uL3

Chain LB:



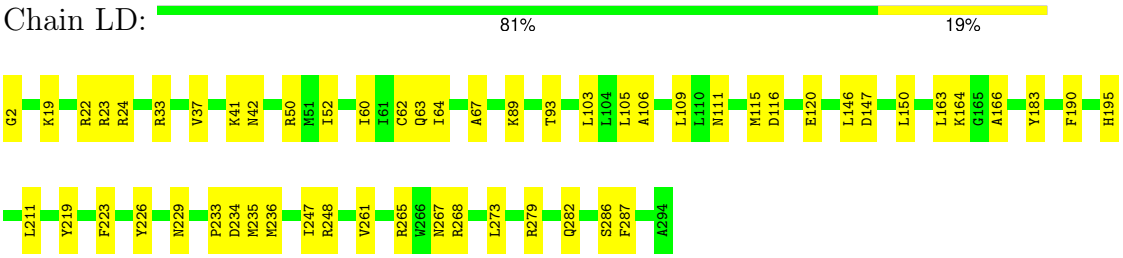

• Molecule 45: 60S ribosomal protein L4

Chain LC:



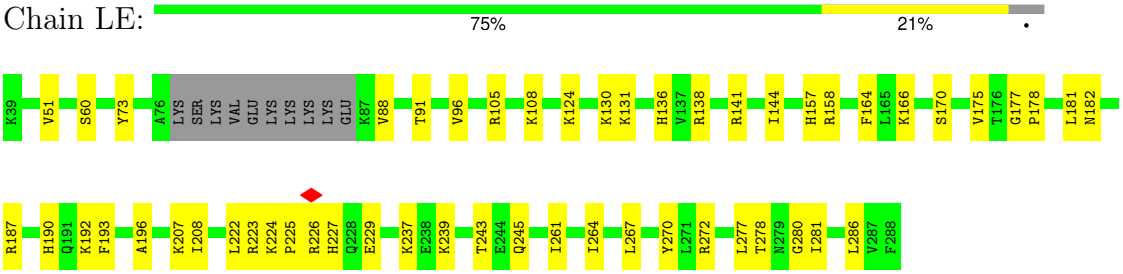

• Molecule 46: Large ribosomal subunit protein uL18

Chain LD:



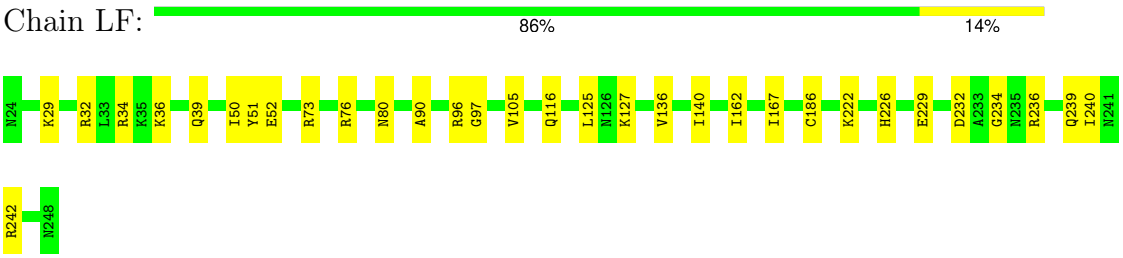

• Molecule 47: Large ribosomal subunit protein eL6

Chain LE:



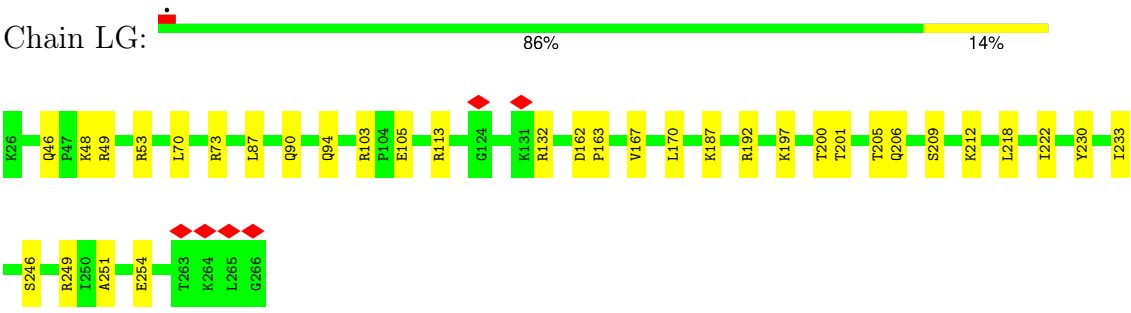

• Molecule 48: 60S ribosomal protein L7

Chain LF:



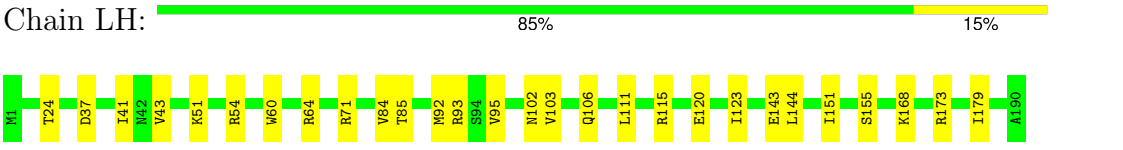

• Molecule 49: 60S ribosomal protein L7a

Chain LG:



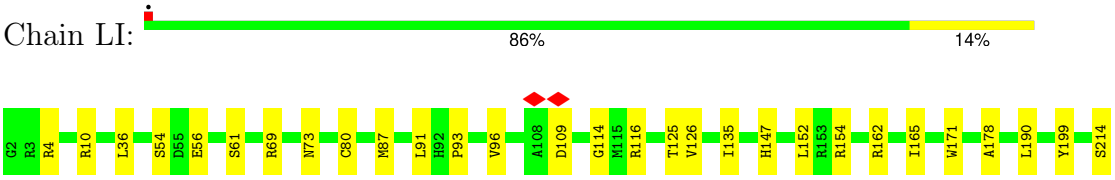

• Molecule 50: 60S ribosomal protein L9

Chain LH:



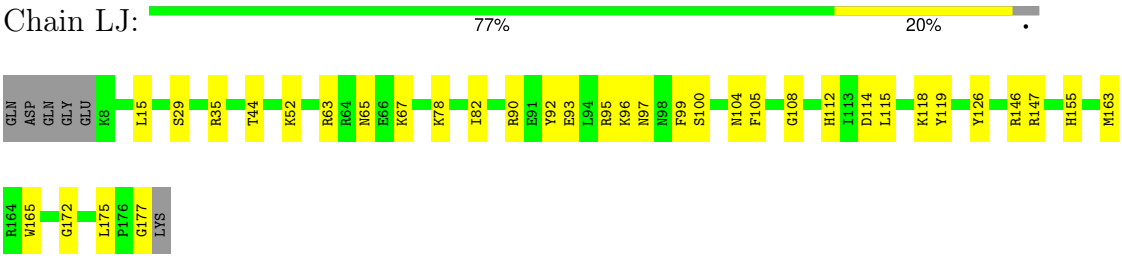

• Molecule 51: Ribosomal protein uL16-like

Chain LI:



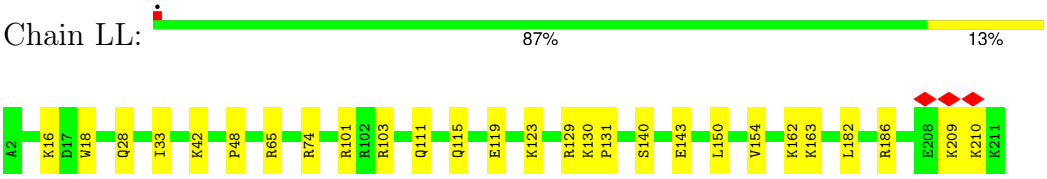

• Molecule 52: 60S ribosomal protein L11

Chain LJ:



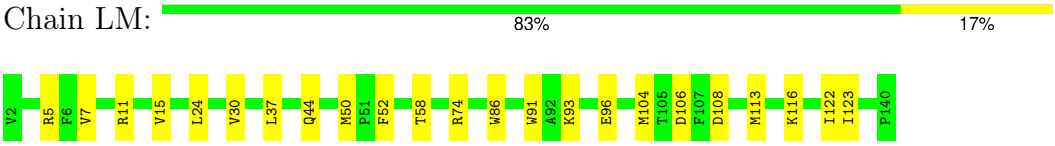

• Molecule 53: Large ribosomal subunit protein eL13

Chain LL:



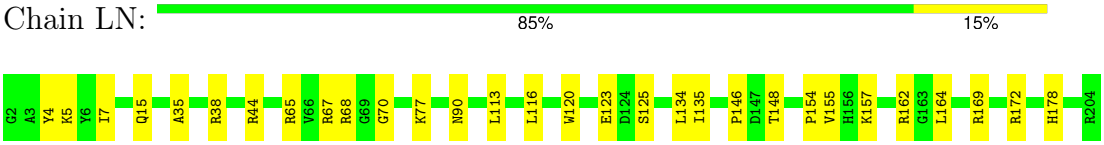

• Molecule 54: 60S ribosomal protein L14

Chain LM:



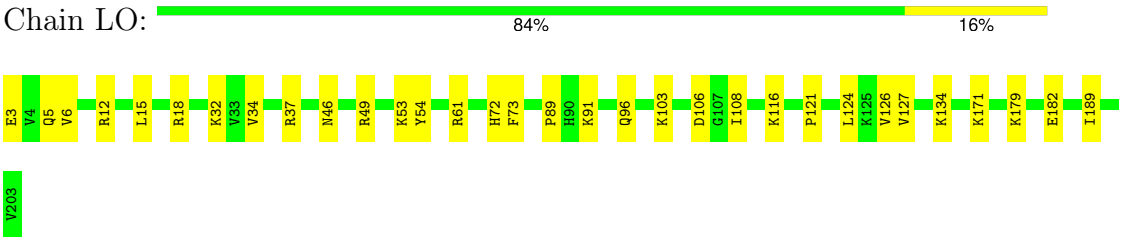

• Molecule 55: 60S ribosomal protein L15

Chain LN:



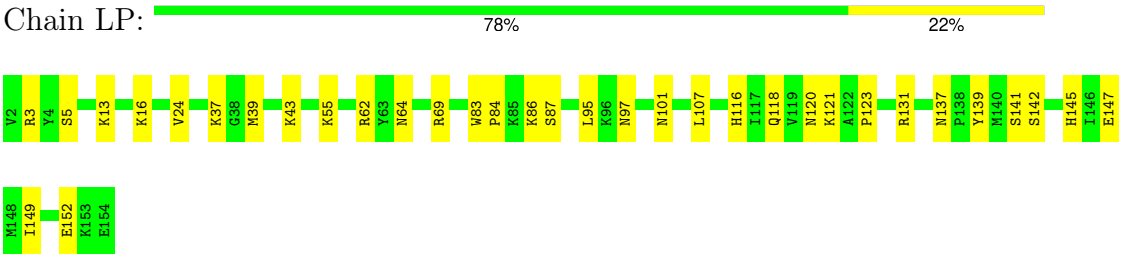

• Molecule 56: 60S ribosomal protein L13a

Chain LO:



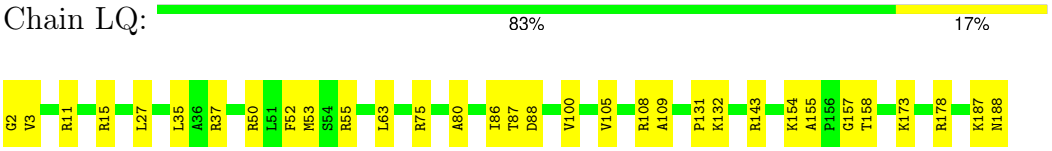

• Molecule 57: 60S ribosomal protein L17

Chain LP:



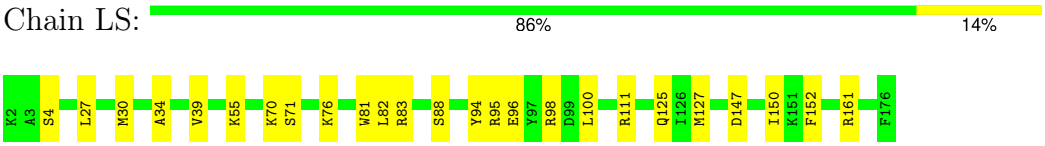

• Molecule 58: 60S ribosomal protein L18

Chain LQ:



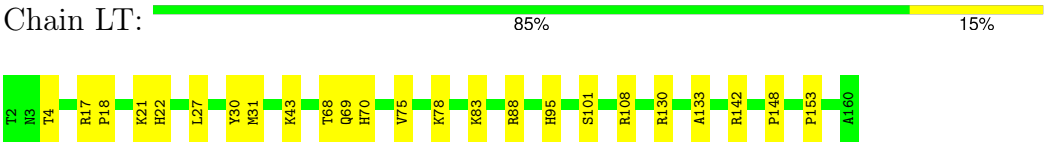

• Molecule 59: 60S ribosomal protein L18a

Chain LS:



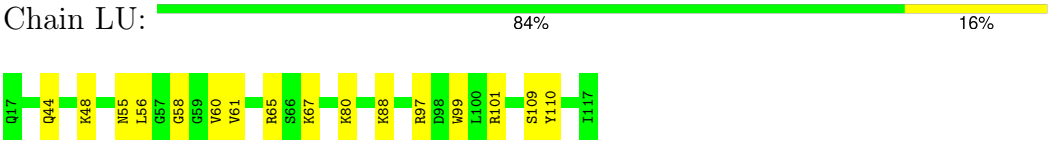

• Molecule 60: 60S ribosomal protein L21

Chain LT:



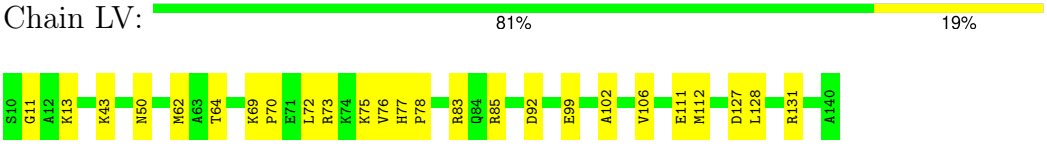

• Molecule 61: Heparin-binding protein HBp15

Chain LU:



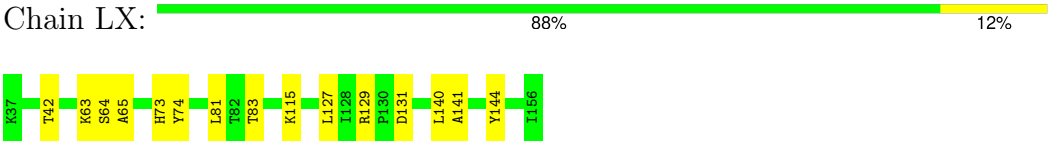

• Molecule 62: 60S ribosomal protein L23

Chain LV:




• Molecule 63: 60S ribosomal protein L23a

Chain LX:



• Molecule 64: 60S ribosomal protein L26

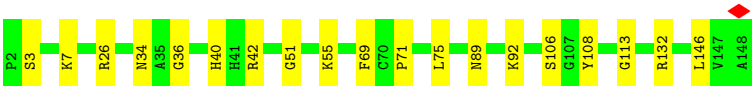
Chain LY:

• Molecule 65: 60S ribosomal protein L27

Chain LZ:

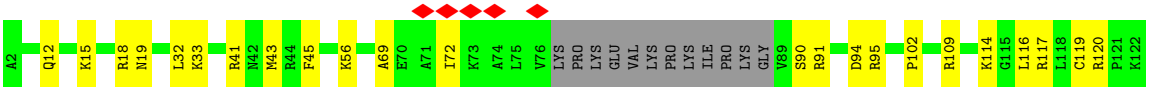
• Molecule 66: 60S ribosomal protein L27a

Chain La:



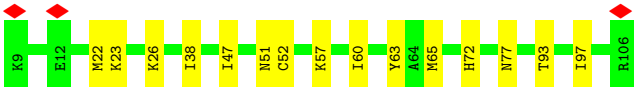

• Molecule 67: Large ribosomal subunit protein eL29

Chain Lb:



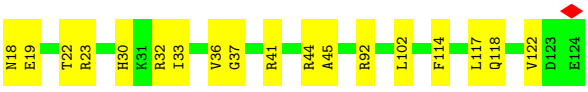

• Molecule 68: 60S ribosomal protein L30

Chain Lc:




• Molecule 69: 60S ribosomal protein L31

Chain Ld:

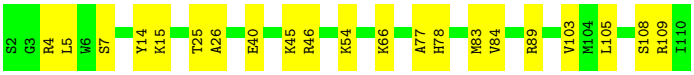



• Molecule 70: 60S ribosomal protein L32

Chain Le:

• Molecule 71: 60S ribosomal protein L35a

Chain Lf:

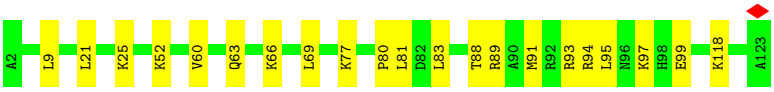



• Molecule 72: 60S ribosomal protein L34

Chain Lg:

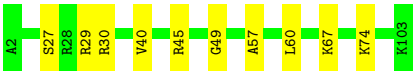
• Molecule 73: 60S ribosomal protein L35

Chain Lh:




• Molecule 74: 60S ribosomal protein L36

Chain Li:

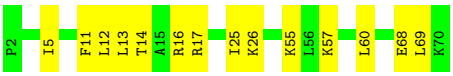



• Molecule 75: 60S ribosomal protein L37

Chain Lj:

• Molecule 76: 60S ribosomal protein L38

Chain Lk:

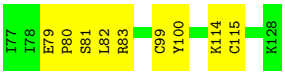



• Molecule 77: 60S ribosomal protein L39

Chain Ll:

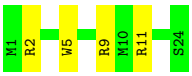
• Molecule 78: Large ribosomal subunit protein eL40

Chain Lm:




• Molecule 79: 60S ribosomal protein L41

Chain Ln:

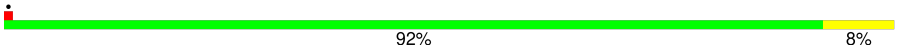


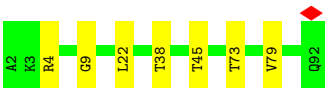

• Molecule 80: 60S ribosomal protein L36a

Chain Lo:

• Molecule 81: 60S ribosomal protein L37a

Chain Lp:



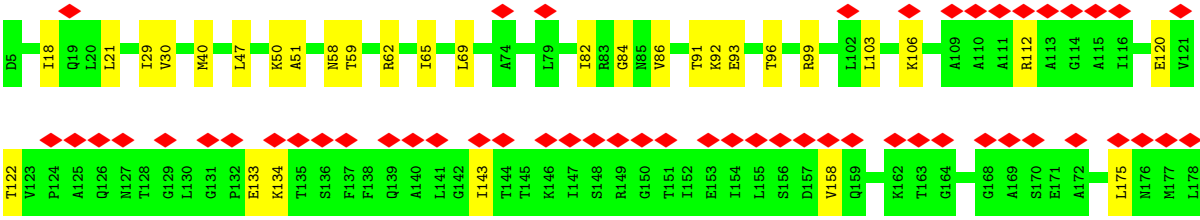




• Molecule 82: 60S ribosomal protein L28

Chain Lr:

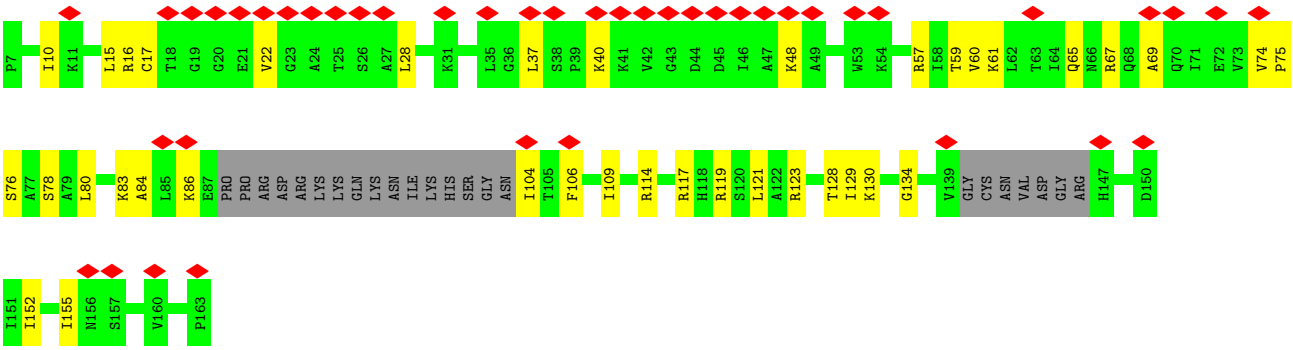
• Molecule 83: 60S acidic ribosomal protein P0

Chain Ls:



• Molecule 84: Large ribosomal subunit protein uL11

Chain Lt:



# 4 Experimental information (i)

| Property | Value | Source |
|---|---|---|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 14418 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | NONE | Depositor |
| Microscope | FEI TECNAI F30 | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/Å^2$) | 50 | Depositor |
| Minimum defocus (nm) | 1200 | Depositor |
| Maximum defocus (nm) | 2500 | Depositor |
| Magnification | Not provided | |
| Image detector | GATAN K3 (6k x 4k) | Depositor |
| Maximum map value | 0.562 | Depositor |
| Minimum map value | -0.228 | Depositor |
| Average map value | 0.001 | Depositor |
| Map value standard deviation | 0.034 | Depositor |
| Recommended contour level | 0.0758 | Depositor |
| Map size (Å) | 546.816, 546.816, 546.816 | wwPDB |
| Map dimensions | 512, 512, 512 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 1.068, 1.068, 1.068 | Depositor |

# 5 Model quality

## 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: OMC, 1MA, MA6, G7M, PSU, 6MZ, 4AC, SPM, HMT, UR3, 3HE, MG, A2M, B8N, SPD, OMG, OMU, 5MC, UY1, ZN

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #$\|Z\|$ >5 | RMSZ | #$\|Z\|$ >5 |
| 1 | SA | 0.17 | 0/1778 | 0.37 | 0/2416 |
| 2 | SB | 0.11 | 0/1765 | 0.28 | 0/2362 |
| 3 | SC | 0.16 | 0/1744 | 0.32 | 0/2357 |
| 4 | SE | 0.12 | 0/2118 | 0.32 | 0/2849 |
| 5 | SG | 0.11 | 0/1946 | 0.30 | 0/2590 |
| 6 | SH | 0.13 | 0/1519 | 0.35 | 0/2033 |
| 7 | SI | 0.12 | 0/1715 | 0.33 | 0/2287 |
| 8 | SJ | 0.11 | 0/1550 | 0.31 | 0/2069 |
| 9 | SL | 0.11 | 0/1268 | 0.29 | 0/1696 |
| 10 | SN | 0.10 | 0/1232 | 0.26 | 0/1656 |
| 11 | SO | 0.12 | 0/1037 | 0.32 | 0/1391 |
| 12 | SV | 0.13 | 0/643 | 0.33 | 0/860 |
| 13 | SW | 0.13 | 0/1051 | 0.29 | 0/1406 |
| 14 | SX | 0.13 | 0/1116 | 0.33 | 0/1490 |
| 15 | SY | 0.12 | 0/1083 | 0.33 | 0/1438 |
| 16 | Sa | 0.12 | 0/836 | 0.30 | 0/1121 |
| 17 | Sb | 0.14 | 0/665 | 0.34 | 0/891 |
| 18 | Se | 0.13 | 0/465 | 0.35 | 0/612 |
| 19 | S2 | 0.17 | 1/39756 (0.0%) | 0.28 | 0/61939 |
| 20 | LR | 0.21 | 0/1582 | 0.41 | 0/2091 |
| 21 | LW | 0.12 | 0/959 | 0.29 | 0/1270 |
| 22 | SR | 0.24 | 0/1105 | 0.48 | 0/1484 |
| 23 | SD | 0.12 | 0/1793 | 0.26 | 0/2414 |
| 24 | SF | 0.10 | 0/1516 | 0.27 | 0/2037 |
| 25 | SK | 0.12 | 0/851 | 0.31 | 0/1147 |
| 26 | SM | 0.10 | 0/950 | 0.34 | 0/1275 |
| 27 | SP | 0.11 | 0/1003 | 0.30 | 0/1342 |
| 28 | SQ | 0.12 | 0/1160 | 0.34 | 0/1553 |
| 29 | SS | 0.11 | 0/1216 | 0.33 | 0/1628 |
| 30 | ST | 0.11 | 0/1131 | 0.28 | 0/1515 |
| 31 | SU | 0.13 | 0/831 | 0.33 | 0/1115 |

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #\|Z\| >5 | RMSZ | #\|Z\| >5 |
| 32 | SZ | 0.13 | 0/604 | 0.37 | 0/810 |
| 33 | Sc | 0.13 | 0/508 | 0.31 | 0/680 |
| 34 | Sd | 0.12 | 0/470 | 0.27 | 0/623 |
| 35 | Sf | 0.14 | 0/560 | 0.43 | 0/745 |
| 36 | Sg | 0.12 | 0/2493 | 0.33 | 0/3394 |
| 37 | At | 0.11 | 0/1692 | 0.24 | 0/2634 |
| 38 | Pt | 0.12 | 0/1761 | 0.25 | 0/2741 |
| 39 | CI | 0.08 | 0/247 | 0.27 | 0/323 |
| 40 | L5 | 0.17 | 0/85098 | 0.28 | 0/132762 |
| 41 | L7 | 0.14 | 0/2861 | 0.24 | 0/4459 |
| 42 | L8 | 0.14 | 0/3631 | 0.27 | 0/5657 |
| 43 | LA | 0.15 | 0/1936 | 0.35 | 0/2596 |
| 44 | LB | 0.13 | 0/3306 | 0.30 | 0/4424 |
| 45 | LC | 0.14 | 0/2981 | 0.30 | 0/4002 |
| 46 | LD | 0.13 | 0/2428 | 0.28 | 0/3252 |
| 47 | LE | 0.14 | 0/1973 | 0.37 | 0/2645 |
| 48 | LF | 0.13 | 0/1905 | 0.24 | 0/2539 |
| 49 | LG | 0.12 | 0/1960 | 0.32 | 0/2637 |
| 50 | LH | 0.12 | 0/1537 | 0.30 | 0/2066 |
| 51 | LI | 0.12 | 0/1751 | 0.27 | 0/2340 |
| 52 | LJ | 0.12 | 0/1385 | 0.32 | 0/1852 |
| 53 | LL | 0.13 | 0/1732 | 0.29 | 0/2315 |
| 54 | LM | 0.12 | 0/1161 | 0.28 | 0/1554 |
| 55 | LN | 0.13 | 0/1746 | 0.27 | 0/2338 |
| 56 | LO | 0.14 | 0/1682 | 0.29 | 0/2250 |
| 57 | LP | 0.13 | 0/1268 | 0.31 | 0/1701 |
| 58 | LQ | 0.14 | 0/1537 | 0.29 | 0/2052 |
| 59 | LS | 0.14 | 0/1493 | 0.28 | 0/2003 |
| 60 | LT | 0.12 | 0/1326 | 0.26 | 0/1770 |
| 61 | LU | 0.12 | 0/839 | 0.34 | 0/1126 |
| 62 | LV | 0.13 | 0/993 | 0.30 | 0/1332 |
| 63 | LX | 0.12 | 0/1002 | 0.28 | 0/1345 |
| 64 | LY | 0.12 | 0/1132 | 0.28 | 0/1504 |
| 65 | LZ | 0.13 | 0/1130 | 0.29 | 0/1507 |
| 66 | La | 0.14 | 0/1191 | 0.28 | 0/1591 |
| 67 | Lb | 0.12 | 0/889 | 0.31 | 0/1175 |
| 68 | Lc | 0.13 | 0/774 | 0.31 | 0/1038 |
| 69 | Ld | 0.12 | 0/903 | 0.29 | 0/1216 |
| 70 | Le | 0.13 | 0/1071 | 0.26 | 0/1429 |
| 71 | Lf | 0.13 | 0/895 | 0.28 | 0/1198 |
| 72 | Lg | 0.12 | 0/916 | 0.27 | 0/1220 |
| 73 | Lh | 0.10 | 0/1023 | 0.25 | 0/1351 |
| 74 | Li | 0.11 | 0/843 | 0.26 | 0/1115 |

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #\|Z\| >5 | RMSZ | #\|Z\| >5 |
| 75 | Lj | 0.13 | 0/720 | 0.31 | 0/952 |
| 76 | Lk | 0.12 | 0/575 | 0.31 | 0/761 |
| 77 | Ll | 0.12 | 0/454 | 0.22 | 0/599 |
| 78 | Lm | 0.14 | 0/435 | 0.35 | 0/575 |
| 79 | Ln | 0.10 | 0/231 | 0.24 | 0/294 |
| 80 | Lo | 0.13 | 0/876 | 0.27 | 0/1156 |
| 81 | Lp | 0.12 | 0/718 | 0.28 | 0/953 |
| 82 | Lr | 0.12 | 0/1017 | 0.30 | 0/1364 |
| 83 | Ls | 0.15 | 0/1519 | 0.33 | 0/2052 |
| 84 | Lt | 0.16 | 0/1009 | 0.44 | 0/1363 |
| All | All | 0.15 | 1/231571 (0.0%) | 0.29 | 0/339714 |

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|---|---|---|---|
| 1 | SA | 0 | 2 |
| 20 | LR | 0 | 1 |
| 22 | SR | 0 | 2 |
| All | All | 0 | 5 |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 19 | S2 | 668 | A2M | O3'-P | 5.21 | 1.61 | 1.56 |

There are no bond angle outliers.

There are no chirality outliers.

All (5) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|---|---|---|---|---|
| 20 | LR | 136 | ARG | Sidechain |
| 1 | SA | 205 | ARG | Sidechain |
| 1 | SA | 85 | ARG | Sidechain |
| 22 | SR | 80 | ARG | Sidechain |
| 22 | SR | 81 | ARG | Sidechain |

## 5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 1 | SA | 1741 | 0 | 1744 | 50 | 0 |
| 2 | SB | 1738 | 0 | 1809 | 35 | 0 |
| 3 | SC | 1707 | 0 | 1791 | 34 | 0 |
| 4 | SE | 2076 | 0 | 2177 | 48 | 0 |
| 5 | SG | 1923 | 0 | 2089 | 61 | 0 |
| 6 | SH | 1497 | 0 | 1590 | 34 | 0 |
| 7 | SI | 1686 | 0 | 1772 | 33 | 0 |
| 8 | SJ | 1525 | 0 | 1640 | 40 | 0 |
| 9 | SL | 1247 | 0 | 1323 | 24 | 0 |
| 10 | SN | 1208 | 0 | 1294 | 18 | 0 |
| 11 | SO | 1024 | 0 | 1050 | 24 | 0 |
| 12 | SV | 636 | 0 | 637 | 6 | 0 |
| 13 | SW | 1034 | 0 | 1080 | 23 | 0 |
| 14 | SX | 1098 | 0 | 1167 | 23 | 0 |
| 15 | SY | 1065 | 0 | 1142 | 21 | 0 |
| 16 | Sa | 821 | 0 | 870 | 21 | 0 |
| 17 | Sb | 651 | 0 | 670 | 17 | 0 |
| 18 | Se | 459 | 0 | 503 | 12 | 0 |
| 19 | S2 | 36952 | 0 | 18678 | 751 | 0 |
| 20 | LR | 1566 | 0 | 1729 | 29 | 0 |
| 21 | LW | 945 | 0 | 1003 | 25 | 0 |
| 22 | SR | 1090 | 0 | 1149 | 21 | 0 |
| 23 | SD | 1765 | 0 | 1865 | 37 | 0 |
| 24 | SF | 1495 | 0 | 1549 | 33 | 0 |
| 25 | SK | 827 | 0 | 854 | 17 | 0 |
| 26 | SM | 940 | 0 | 965 | 17 | 0 |
| 27 | SP | 985 | 0 | 1031 | 17 | 0 |
| 28 | SQ | 1142 | 0 | 1213 | 29 | 0 |
| 29 | SS | 1198 | 0 | 1261 | 25 | 0 |
| 30 | ST | 1112 | 0 | 1146 | 23 | 0 |
| 31 | SU | 821 | 0 | 883 | 24 | 0 |
| 32 | SZ | 598 | 0 | 656 | 14 | 0 |
| 33 | Sc | 506 | 0 | 536 | 7 | 0 |
| 34 | Sd | 459 | 0 | 449 | 19 | 0 |
| 35 | Sf | 548 | 0 | 553 | 14 | 0 |
| 36 | Sg | 2436 | 0 | 2391 | 64 | 0 |
| 37 | At | 1514 | 0 | 770 | 32 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 38 | Pt | 1576 | 0 | 803 | 25 | 0 |
| 39 | CI | 247 | 0 | 283 | 4 | 0 |
| 40 | L5 | 78444 | 0 | 39715 | 1358 | 0 |
| 41 | L7 | 2561 | 0 | 1295 | 47 | 0 |
| 42 | L8 | 3315 | 0 | 1685 | 57 | 0 |
| 43 | LA | 1898 | 0 | 1993 | 52 | 0 |
| 44 | LB | 3238 | 0 | 3376 | 62 | 0 |
| 45 | LC | 2927 | 0 | 3104 | 46 | 0 |
| 46 | LD | 2382 | 0 | 2410 | 40 | 0 |
| 47 | LE | 1935 | 0 | 2096 | 42 | 0 |
| 48 | LF | 1870 | 0 | 1996 | 26 | 0 |
| 49 | LG | 1927 | 0 | 2074 | 24 | 0 |
| 50 | LH | 1518 | 0 | 1601 | 20 | 0 |
| 51 | LI | 1711 | 0 | 1749 | 21 | 0 |
| 52 | LJ | 1362 | 0 | 1399 | 22 | 0 |
| 53 | LL | 1701 | 0 | 1818 | 22 | 0 |
| 54 | LM | 1138 | 0 | 1204 | 17 | 0 |
| 55 | LN | 1701 | 0 | 1749 | 25 | 0 |
| 56 | LO | 1650 | 0 | 1794 | 27 | 0 |
| 57 | LP | 1242 | 0 | 1269 | 27 | 0 |
| 58 | LQ | 1513 | 0 | 1628 | 25 | 0 |
| 59 | LS | 1453 | 0 | 1490 | 19 | 0 |
| 60 | LT | 1298 | 0 | 1366 | 22 | 0 |
| 61 | LU | 825 | 0 | 850 | 12 | 0 |
| 62 | LV | 979 | 0 | 1039 | 15 | 0 |
| 63 | LX | 985 | 0 | 1066 | 11 | 0 |
| 64 | LY | 1115 | 0 | 1205 | 14 | 0 |
| 65 | LZ | 1107 | 0 | 1182 | 16 | 0 |
| 66 | La | 1162 | 0 | 1213 | 16 | 0 |
| 67 | Lb | 876 | 0 | 948 | 18 | 0 |
| 68 | Lc | 764 | 0 | 804 | 8 | 0 |
| 69 | Ld | 888 | 0 | 930 | 11 | 0 |
| 70 | Le | 1053 | 0 | 1147 | 9 | 0 |
| 71 | Lf | 876 | 0 | 912 | 15 | 0 |
| 72 | Lg | 906 | 0 | 998 | 8 | 0 |
| 73 | Lh | 1015 | 0 | 1148 | 19 | 0 |
| 74 | Li | 832 | 0 | 917 | 8 | 0 |
| 75 | Lj | 705 | 0 | 737 | 11 | 0 |
| 76 | Lk | 569 | 0 | 637 | 8 | 0 |
| 77 | Ll | 444 | 0 | 483 | 10 | 0 |
| 78 | Lm | 429 | 0 | 465 | 6 | 0 |
| 79 | Ln | 230 | 0 | 276 | 3 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 80 | Lo | 862 | 0 | 929 | 15 | 0 |
| 81 | Lp | 708 | 0 | 756 | 8 | 0 |
| 82 | Lr | 1002 | 0 | 1068 | 10 | 0 |
| 83 | Ls | 1496 | 0 | 1540 | 22 | 0 |
| 84 | Lt | 998 | 0 | 1032 | 27 | 0 |
| 85 | Lg | 1 | 0 | 0 | 0 | 0 |
| 85 | Lj | 1 | 0 | 0 | 0 | 0 |
| 85 | Lm | 1 | 0 | 0 | 0 | 0 |
| 85 | Lo | 1 | 0 | 0 | 0 | 0 |
| 85 | Lp | 1 | 0 | 0 | 0 | 0 |
| 85 | Sa | 1 | 0 | 0 | 0 | 0 |
| 86 | L5 | 178 | 0 | 0 | 0 | 0 |
| 86 | L7 | 3 | 0 | 0 | 0 | 0 |
| 86 | L8 | 6 | 0 | 0 | 0 | 0 |
| 86 | LA | 1 | 0 | 0 | 0 | 0 |
| 86 | LP | 1 | 0 | 0 | 0 | 0 |
| 86 | LV | 1 | 0 | 0 | 0 | 0 |
| 86 | Le | 1 | 0 | 0 | 0 | 0 |
| 86 | S2 | 27 | 0 | 0 | 0 | 0 |
| 86 | SS | 1 | 0 | 0 | 0 | 0 |
| 87 | L5 | 98 | 0 | 182 | 7 | 0 |
| 88 | L5 | 90 | 0 | 171 | 3 | 0 |
| 88 | L8 | 10 | 0 | 19 | 2 | 0 |
| 89 | L5 | 20 | 0 | 23 | 0 | 0 |
| 90 | L5 | 39 | 0 | 39 | 1 | 0 |
| All | All | 219950 | 0 | 163642 | 3404 | 0 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 9.

All (3404) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1095:A:C2 | 40:L5:1200:G:N1 | 2.25 | 1.02 |
| 40:L5:1095:A:H2 | 40:L5:1200:G:H1 | 1.01 | 0.98 |
| 40:L5:2483:G:H1 | 40:L5:2495:U:H3 | 1.09 | 0.98 |
| 40:L5:1095:A:H2 | 40:L5:1200:G:N1 | 1.57 | 0.98 |
| 40:L5:4601:U:H3 | 40:L5:4610:A:H62 | 1.01 | 0.97 |
| 19:S2:1166:G:H1 | 19:S2:1193:U:H3 | 1.13 | 0.96 |
| 19:S2:1417:C:H42 | 19:S2:1422:G:H22 | 1.15 | 0.94 |
| 40:L5:1759:G:H1 | 40:L5:1773:U:H3 | 0.98 | 0.93 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:925:G:H1 | 19:S2:1017:U:H3 | 0.93 | 0.87 |
| 40:L5:1629:G:H1 | 43:LA:208:GLU:HG2 | 1.39 | 0.87 |
| 19:S2:878:G:H1 | 19:S2:908:A:H2 | 1.21 | 0.84 |
| 40:L5:4601:U:H3 | 40:L5:4610:A:N6 | 1.74 | 0.84 |
| 40:L5:450:G:H1 | 40:L5:1297:U:H3 | 1.24 | 0.83 |
| 19:S2:1096:G:H1 | 19:S2:1136:U:H3 | 1.24 | 0.82 |
| 40:L5:4421:C:H42 | 40:L5:4475:G:H22 | 1.25 | 0.82 |
| 40:L5:4638:U:H3 | 40:L5:4661:G:H1 | 1.28 | 0.82 |
| 40:L5:4748:U:H3 | 40:L5:4952:G:H1 | 1.26 | 0.81 |
| 1:SA:148:CYS:N | 1:SA:163:CYS:SG | 2.54 | 0.81 |
| 19:S2:1752:C:C4 | 19:S2:1779:G:N2 | 2.49 | 0.80 |
| 19:S2:1033:G:H1 | 19:S2:1080:A:HO2' | 1.28 | 0.79 |
| 40:L5:1176:C:N3 | 40:L5:1184:A:N6 | 2.32 | 0.78 |
| 19:S2:146:G:H1 | 19:S2:173:A:H61 | 1.30 | 0.77 |
| 19:S2:822:U:H3 | 19:S2:826:A:H62 | 1.34 | 0.76 |
| 40:L5:4421:C:H42 | 40:L5:4475:G:N2 | 1.84 | 0.76 |
| 19:S2:1656:G:H1 | 19:S2:1668:U:H3 | 1.32 | 0.76 |
| 40:L5:2520:C:O2 | 40:L5:2640:G:N2 | 2.19 | 0.76 |
| 19:S2:1351:G:H1 | 19:S2:1360:U:H3 | 1.33 | 0.75 |
| 19:S2:1729:U:H3 | 19:S2:1805:G:H1 | 1.33 | 0.75 |
| 4:SE:79:ASP:HB3 | 4:SE:82:TYR:HB2 | 1.68 | 0.75 |
| 19:S2:1650:A:H5" | 28:SQ:139:ALA:HB2 | 1.69 | 0.75 |
| 84:Lt:16:ARG:HE | 84:Lt:17:CYS:H | 1.33 | 0.75 |
| 40:L5:4421:C:N4 | 40:L5:4475:G:H22 | 1.84 | 0.75 |
| 40:L5:2557:G:H1 | 40:L5:2570:U:H3 | 1.34 | 0.74 |
| 40:L5:4745:G:H1 | 40:L5:4955:A:H61 | 1.33 | 0.74 |
| 1:SA:148:CYS:SG | 1:SA:163:CYS:N | 2.60 | 0.74 |
| 20:LR:134:ASN:H | 20:LR:137:ILE:HD11 | 1.52 | 0.74 |
| 40:L5:1974:U:H4' | 40:L5:1975:G:H3' | 1.68 | 0.74 |
| 40:L5:5002:U:H3 | 40:L5:5045:G:H1 | 1.34 | 0.74 |
| 40:L5:1273:G:N7 | 67:Lb:117:ARG:NH1 | 2.36 | 0.74 |
| 40:L5:3937:C:H1' | 55:LN:125:SER:HB3 | 1.70 | 0.74 |
| 19:S2:106:C:H2' | 19:S2:107:A:H8 | 1.52 | 0.73 |
| 37:At:50:U:H3 | 37:At:64:G:H1 | 1.36 | 0.73 |
| 40:L5:1095:A:N1 | 40:L5:1200:G:O6 | 2.22 | 0.72 |
| 40:L5:2611:A:H5' | 40:L5:2688:G:H4' | 1.70 | 0.72 |
| 19:S2:110:U:H3 | 19:S2:351:G:H1 | 1.34 | 0.72 |
| 40:L5:262:G:H2' | 40:L5:263:G:H8 | 1.54 | 0.72 |
| 36:Sg:10:THR:HB | 36:Sg:306:LEU:HD21 | 1.69 | 0.72 |
| 40:L5:3868:G:H22 | 40:L5:3900:G:H1' | 1.54 | 0.72 |
| 19:S2:639:C:H2' | 19:S2:640:A:H8 | 1.55 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1461:G:H3' | 19:S2:1463:U:H3 | 1.56 | 0.71 |
| 19:S2:1652:G:H1 | 19:S2:1672:U:H3 | 1.38 | 0.71 |
| 29:SS:45:LEU:HD22 | 29:SS:50:ILE:HD11 | 1.73 | 0.71 |
| 40:L5:4887:C:H42 | 40:L5:4932:U:H3 | 1.36 | 0.71 |
| 40:L5:4126:C:H5" | 40:L5:4127:A:H5" | 1.72 | 0.71 |
| 36:Sg:247:TRP:HB3 | 36:Sg:258:ILE:HD11 | 1.73 | 0.71 |
| 11:SO:95:ILE:HB | 11:SO:129:ILE:HG22 | 1.70 | 0.71 |
| 19:S2:1752:C:N4 | 19:S2:1779:G:N2 | 2.39 | 0.71 |
| 40:L5:1414:C:H2' | 40:L5:1415:G:H8 | 1.56 | 0.71 |
| 19:S2:508:A:H3' | 19:S2:509:OMG:H8 | 1.55 | 0.71 |
| 40:L5:2780:C:H2' | 40:L5:2781:G:H8 | 1.56 | 0.70 |
| 19:S2:878:G:O6 | 19:S2:908:A:N1 | 2.24 | 0.70 |
| 1:SA:41:ARG:HE | 1:SA:45:GLY:HA2 | 1.57 | 0.70 |
| 40:L5:512:U:H3 | 40:L5:647:G:H1 | 1.39 | 0.70 |
| 40:L5:1976:G:O6 | 40:L5:1990:A:N1 | 2.25 | 0.70 |
| 11:SO:52:THR:HG21 | 19:S2:952:G:H21 | 1.56 | 0.70 |
| 40:L5:2845:A:H61 | 40:L5:3843:C:H42 | 1.40 | 0.70 |
| 19:S2:851:C:H5" | 19:S2:852:G:H5' | 1.74 | 0.70 |
| 19:S2:864:A:H2' | 19:S2:865:A:H8 | 1.56 | 0.70 |
| 19:S2:928:G:H2' | 19:S2:929:G:C8 | 2.27 | 0.69 |
| 19:S2:43:U:OP2 | 19:S2:485:A:N6 | 2.21 | 0.69 |
| 40:L5:4546:A:N7 | 43:LA:215:ASN:ND2 | 2.40 | 0.69 |
| 41:L7:28:C:H1' | 41:L7:54:A:H61 | 1.57 | 0.69 |
| 34:Sd:21:CYS:SG | 34:Sd:39:CYS:N | 2.64 | 0.69 |
| 37:At:18:G:O6 | 37:At:55:U:O2 | 2.11 | 0.69 |
| 40:L5:3780:G:H1 | 40:L5:3814:U:H3 | 1.40 | 0.69 |
| 40:L5:2702:C:OP1 | 61:LU:101:ARG:NH2 | 2.25 | 0.69 |
| 40:L5:1759:G:N2 | 40:L5:1773:U:O2 | 2.22 | 0.69 |
| 72:Lg:83:CYS:SG | 72:Lg:86:CYS:HB2 | 2.32 | 0.69 |
| 13:SW:2:VAL:N | 19:S2:1091:C:HO2' | 1.91 | 0.69 |
| 40:L5:3824:A:H3' | 40:L5:3825:A2M:H8 | 1.73 | 0.69 |
| 40:L5:323:C:H2' | 40:L5:324:A:H8 | 1.58 | 0.69 |
| 19:S2:1417:C:O2 | 19:S2:1422:G:O6 | 2.11 | 0.69 |
| 19:S2:159:A2M:H2 | 19:S2:467:G:H21 | 1.58 | 0.68 |
| 19:S2:15:U:O2' | 19:S2:669:A:N6 | 2.27 | 0.68 |
| 34:Sd:39:CYS:HB2 | 34:Sd:42:CYS:HB2 | 1.76 | 0.68 |
| 3:SC:173:LYS:HD3 | 12:SV:3:ASN:HA | 1.75 | 0.68 |
| 76:Lk:13:LEU:HA | 76:Lk:16:ARG:HG2 | 1.75 | 0.68 |
| 19:S2:557:U:H2' | 19:S2:558:G:C8 | 2.29 | 0.68 |
| 19:S2:1748:G:H1 | 19:S2:1786:U:H3 | 1.42 | 0.68 |
| 29:SS:63:GLU:HG2 | 29:SS:66:ARG:HH21 | 1.57 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:664:G:N2 | 40:L5:666:G:O6 | 2.27 | 0.68 |
| 40:L5:3641:U:OP2 | 40:L5:3646:A:N6 | 2.27 | 0.68 |
| 36:Sg:87:LEU:HB2 | 36:Sg:101:PHE:HB2 | 1.76 | 0.68 |
| 87:L5:5292:SPM:H112 | 56:LO:91:LYS:HD3 | 1.75 | 0.68 |
| 1:SA:125:THR:HG22 | 1:SA:126:ASP:H | 1.58 | 0.68 |
| 14:SX:64:SER:HB3 | 19:S2:614:C:H1' | 1.76 | 0.68 |
| 40:L5:1984:A:N7 | 40:L5:2010:A:O2' | 2.27 | 0.68 |
| 2:SB:192:SER:HA | 2:SB:195:LYS:HD2 | 1.76 | 0.67 |
| 7:SI:98:LYS:HB3 | 19:S2:377:G:H5' | 1.75 | 0.67 |
| 84:Lt:76:SER:O | 84:Lt:114:ARG:NH2 | 2.27 | 0.67 |
| 44:LB:90:VAL:HG23 | 44:LB:163:ILE:HD11 | 1.77 | 0.67 |
| 17:Sb:20:LYS:NZ | 19:S2:1016:U:OP2 | 2.26 | 0.67 |
| 40:L5:4992:G:H2' | 40:L5:4993:G:C8 | 2.30 | 0.67 |
| 84:Lt:123:ARG:HB2 | 84:Lt:128:THR:HG21 | 1.76 | 0.67 |
| 3:SC:193:VAL:HG11 | 3:SC:240:THR:HG22 | 1.76 | 0.67 |
| 40:L5:2093:A:N3 | 40:L5:2094:G:N1 | 2.43 | 0.67 |
| 6:SH:7:LYS:NZ | 6:SH:15:LYS:O | 2.28 | 0.67 |
| 17:Sb:65:GLN:HB2 | 17:Sb:72:ARG:HB3 | 1.76 | 0.67 |
| 51:LI:54:SER:HB3 | 51:LI:135:ILE:HD11 | 1.75 | 0.67 |
| 40:L5:40:G:N2 | 40:L5:4380:A:N7 | 2.43 | 0.67 |
| 1:SA:38:ILE:HD11 | 1:SA:47:TYR:HB3 | 1.78 | 0.66 |
| 40:L5:505:G:H1 | 40:L5:653:U:H3 | 1.42 | 0.66 |
| 17:Sb:56:CYS:HB2 | 17:Sb:59:CYS:H | 1.60 | 0.66 |
| 42:L8:134:G:H5" | 63:LX:63:LYS:HD2 | 1.77 | 0.66 |
| 4:SE:100:ARG:HB2 | 4:SE:114:ILE:HD13 | 1.77 | 0.66 |
| 7:SI:124:LYS:NZ | 40:L5:5025:C:OP2 | 2.28 | 0.66 |
| 40:L5:679:C:H2' | 40:L5:680:G:H8 | 1.61 | 0.66 |
| 3:SC:196:ILE:HB | 3:SC:223:TYR:HB2 | 1.76 | 0.66 |
| 37:At:23:C:H2' | 37:At:24:A:H8 | 1.60 | 0.66 |
| 40:L5:4373:G:N7 | 80:Lo:61:LYS:NZ | 2.43 | 0.66 |
| 40:L5:4537:C:H2' | 40:L5:4538:G:H8 | 1.61 | 0.66 |
| 40:L5:308:G:OP2 | 40:L5:308:G:N2 | 2.27 | 0.66 |
| 4:SE:19:MET:SD | 4:SE:108:ARG:NH1 | 2.68 | 0.66 |
| 6:SH:144:ILE:HD13 | 6:SH:154:ILE:HG13 | 1.78 | 0.66 |
| 5:SG:42:GLY:O | 5:SG:46:LYS:NZ | 2.28 | 0.66 |
| 57:LP:118:GLN:HE21 | 57:LP:120:ASN:HD21 | 1.42 | 0.66 |
| 41:L7:23:A:N3 | 41:L7:118:C:O2' | 2.27 | 0.65 |
| 6:SH:154:ILE:HB | 6:SH:185:VAL:HG22 | 1.77 | 0.65 |
| 26:SM:96:ARG:NH2 | 26:SM:100:PRO:O | 2.29 | 0.65 |
| 31:SU:66:ARG:HH12 | 31:SU:75:LYS:HD3 | 1.62 | 0.65 |
| 6:SH:30:LEU:HG | 6:SH:33:ASN:HD22 | 1.60 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1403:C:N4 | 19:S2:1433:C:OP1 | 2.29 | 0.65 |
| 27:SP:18:ARG:NH1 | 29:SS:88:LYS:O | 2.29 | 0.65 |
| 40:L5:1326:A2M:H2' | 40:L5:1327:C:C6 | 2.31 | 0.65 |
| 40:L5:3594:C:O2 | 40:L5:3597:G:N2 | 2.30 | 0.65 |
| 32:SZ:68:ILE:HD11 | 32:SZ:73:VAL:HB | 1.79 | 0.65 |
| 40:L5:4122:G:H4' | 72:Lg:90:ARG:HG2 | 1.79 | 0.65 |
| 42:L8:90:C:H1' | 64:LY:24:HIS:HB3 | 1.77 | 0.65 |
| 19:S2:1756:C:N4 | 19:S2:1775:U:O4 | 2.30 | 0.65 |
| 37:At:23:C:H2' | 37:At:24:A:C8 | 2.31 | 0.65 |
| 19:S2:1844:U:OP1 | 79:Ln:11:ARG:NH2 | 2.30 | 0.65 |
| 40:L5:1995:G:N2 | 84:Lt:121:LEU:O | 2.30 | 0.65 |
| 32:SZ:58:LEU:HD12 | 32:SZ:62:VAL:HG21 | 1.79 | 0.65 |
| 40:L5:300:A:H2' | 40:L5:301:G:H8 | 1.61 | 0.65 |
| 40:L5:3672:G:OP2 | 40:L5:3672:G:N2 | 2.29 | 0.65 |
| 47:LE:281:ILE:HD12 | 47:LE:286:LEU:HD11 | 1.78 | 0.65 |
| 19:S2:146:G:H1 | 19:S2:173:A:N6 | 1.95 | 0.65 |
| 19:S2:1546:G:H22 | 19:S2:1655:C:H1' | 1.63 | 0.64 |
| 19:S2:1603:G:H21 | 29:SS:24:ARG:HH21 | 1.45 | 0.64 |
| 1:SA:198:MET:HE1 | 1:SA:200:ASP:HB2 | 1.78 | 0.64 |
| 41:L7:92:C:H2' | 41:L7:93:G:H8 | 1.62 | 0.64 |
| 1:SA:102:ARG:HH21 | 1:SA:105:PRO:HD3 | 1.63 | 0.64 |
| 40:L5:2870:A:OP2 | 40:L5:2879:A:N6 | 2.30 | 0.64 |
| 84:Lt:37:LEU:HA | 84:Lt:40:LYS:HE3 | 1.80 | 0.64 |
| 3:SC:68:ARG:HG2 | 3:SC:277:HIS:HB2 | 1.78 | 0.64 |
| 6:SH:144:ILE:HD11 | 6:SH:152:ARG:HB3 | 1.80 | 0.64 |
| 19:S2:874:G:H2' | 19:S2:875:A:H8 | 1.62 | 0.64 |
| 40:L5:758:G:H4' | 50:LH:51:LYS:HE3 | 1.80 | 0.64 |
| 5:SG:146:ASN:O | 21:LW:101:ARG:NH1 | 2.31 | 0.64 |
| 19:S2:191:A:N6 | 19:S2:208:G:O2' | 2.30 | 0.64 |
| 40:L5:1094:G:O6 | 40:L5:1201:U:O2 | 2.15 | 0.64 |
| 40:L5:4523:A2M:H5" | 40:L5:4524:G:H5' | 1.79 | 0.64 |
| 40:L5:2845:A:H61 | 40:L5:3843:C:N4 | 1.96 | 0.64 |
| 40:L5:4101:C:O2' | 40:L5:4109:G:O6 | 2.16 | 0.64 |
| 84:Lt:16:ARG:HH22 | 84:Lt:28:LEU:HB3 | 1.61 | 0.64 |
| 13:SW:107:SER:HB2 | 19:S2:860:G:H21 | 1.62 | 0.64 |
| 40:L5:1870:C:H2' | 40:L5:1871:A2M:H8 | 1.79 | 0.64 |
| 3:SC:182:CYS:HB2 | 13:SW:95:PRO:HB2 | 1.80 | 0.63 |
| 5:SG:2:LYS:HD3 | 5:SG:15:LEU:HD21 | 1.80 | 0.63 |
| 29:SS:67:VAL:HG12 | 29:SS:71:MET:HE2 | 1.80 | 0.63 |
| 40:L5:4558:U:OP2 | 44:LB:246:ARG:NH2 | 2.30 | 0.63 |
| 47:LE:264:ILE:HD11 | 47:LE:267:LEU:HD22 | 1.79 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 82:Lr:46:ARG:O | 82:Lr:70:GLN:NE2 | 2.30 | 0.63 |
| 5:SG:56:ASN:OD1 | 19:S2:155:G:N2 | 2.31 | 0.63 |
| 19:S2:1403:C:OP2 | 19:S2:1405:A:N6 | 2.30 | 0.63 |
| 19:S2:1536:G:H2' | 19:S2:1537:A:H8 | 1.62 | 0.63 |
| 19:S2:1850:MA6:H2' | 19:S2:1851:MA6:H8 | 1.80 | 0.63 |
| 40:L5:174:C:OP1 | 53:LL:129:ARG:NH2 | 2.31 | 0.63 |
| 40:L5:4272:G:N2 | 40:L5:4272:G:OP2 | 2.30 | 0.63 |
| 15:SY:36:PRO:HG3 | 19:S2:570:C:H4' | 1.79 | 0.63 |
| 19:S2:668:A2M:H2' | 19:S2:669:A:N7 | 2.14 | 0.63 |
| 2:SB:60:ASP:HA | 2:SB:63:LYS:HD2 | 1.79 | 0.63 |
| 6:SH:8:ILE:HG13 | 6:SH:9:VAL:HG23 | 1.79 | 0.63 |
| 8:SJ:80:ARG:NH2 | 19:S2:818:A:OP1 | 2.32 | 0.63 |
| 17:Sb:26:GLN:NE2 | 19:S2:921:G:OP2 | 2.31 | 0.63 |
| 19:S2:1513:C:H2' | 19:S2:1514:G:H8 | 1.63 | 0.63 |
| 50:LH:106:GLN:HB2 | 50:LH:111:LEU:HB3 | 1.79 | 0.63 |
| 40:L5:1700:G:H5" | 40:L5:1704:C:H42 | 1.64 | 0.63 |
| 40:L5:3659:G:OP1 | 43:LA:241:ARG:NH1 | 2.31 | 0.63 |
| 40:L5:4088:C:H2' | 40:L5:4089:G:H8 | 1.64 | 0.63 |
| 75:Lj:2:THR:HG22 | 75:Lj:4:GLY:H | 1.63 | 0.63 |
| 16:Sa:59:PHE:HB2 | 16:Sa:62:TYR:HB2 | 1.81 | 0.63 |
| 19:S2:603:C:N4 | 19:S2:620:G:O6 | 2.32 | 0.63 |
| 21:LW:1:MET:HG3 | 44:LB:366:LYS:HB3 | 1.81 | 0.63 |
| 40:L5:327:U:O2' | 74:Li:30:ARG:NH1 | 2.31 | 0.63 |
| 40:L5:1332:C:H2' | 40:L5:1333:A:H8 | 1.64 | 0.63 |
| 19:S2:885:U:O2 | 19:S2:901:G:O6 | 2.17 | 0.63 |
| 40:L5:1646:A:O2' | 75:Lj:49:TRP:O | 2.17 | 0.63 |
| 40:L5:4304:A:OP2 | 40:L5:4305:G:N2 | 2.32 | 0.63 |
| 5:SG:186:GLN:NE2 | 19:S2:332:G:O6 | 2.32 | 0.63 |
| 19:S2:690:G:H3' | 19:S2:691:G:H21 | 1.64 | 0.63 |
| 19:S2:1752:C:N3 | 19:S2:1779:G:N1 | 2.46 | 0.63 |
| 40:L5:1743:A:N1 | 40:L5:1789:C:O2' | 2.29 | 0.63 |
| 40:L5:3722:G:H2' | 40:L5:3723:A:H8 | 1.64 | 0.63 |
| 40:L5:4174:U:H2' | 40:L5:4175:G:H8 | 1.63 | 0.63 |
| 4:SE:11:ARG:NH1 | 4:SE:24:THR:OG1 | 2.27 | 0.63 |
| 22:SR:20:TYR:HD2 | 22:SR:23:ARG:HG3 | 1.63 | 0.62 |
| 40:L5:1683:PSU:H2' | 40:L5:1684:A:H8 | 1.64 | 0.62 |
| 40:L5:4280:A:OP2 | 46:LD:23:ARG:NH2 | 2.32 | 0.62 |
| 19:S2:1536:G:H2' | 19:S2:1537:A:C8 | 2.34 | 0.62 |
| 40:L5:2601:A:N6 | 40:L5:2744:A:OP2 | 2.31 | 0.62 |
| 40:L5:2613:C:OP1 | 72:Lg:24:ARG:NH2 | 2.32 | 0.62 |
| 53:LL:209:LYS:HG3 | 53:LL:210:LYS:HG2 | 1.81 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 14:SX:64:SER:OG | 19:S2:1824:A:N6 | 2.33 | 0.62 |
| 21:LW:2:LYS:NZ | 62:LV:92:ASP:O | 2.33 | 0.62 |
| 40:L5:4745:G:H1 | 40:L5:4955:A:N6 | 1.96 | 0.62 |
| 45:LC:317:ASN:HD22 | 45:LC:320:LYS:HD3 | 1.64 | 0.62 |
| 3:SC:194:ARG:NH1 | 19:S2:1156:U:O4 | 2.33 | 0.62 |
| 19:S2:149:A:H3' | 19:S2:150:A:H8 | 1.64 | 0.62 |
| 19:S2:454:U:H2' | 19:S2:455:A:H8 | 1.65 | 0.62 |
| 40:L5:369:G:N2 | 40:L5:372:A:OP2 | 2.26 | 0.62 |
| 40:L5:655:C:OP1 | 45:LC:268:ARG:NH1 | 2.32 | 0.62 |
| 40:L5:1972:G:C6 | 40:L5:1973:G:O6 | 2.52 | 0.62 |
| 40:L5:4525:C:OP1 | 44:LB:246:ARG:NH1 | 2.32 | 0.62 |
| 42:L8:62:A:OP1 | 73:Lh:52:LYS:NZ | 2.33 | 0.62 |
| 19:S2:1426:U:OP1 | 28:SQ:69:ARG:NH1 | 2.33 | 0.62 |
| 40:L5:312:G:H1 | 40:L5:325:U:H3 | 1.47 | 0.62 |
| 19:S2:1289:U:H4' | 25:SK:2:LEU:HD21 | 1.81 | 0.62 |
| 40:L5:1095:A:N1 | 40:L5:1200:G:C6 | 2.68 | 0.62 |
| 40:L5:4980:C:N3 | 57:LP:69:ARG:NH2 | 2.47 | 0.62 |
| 19:S2:115:U:H2' | 19:S2:116:OMU:H6 | 1.80 | 0.62 |
| 26:SM:52:LEU:HD11 | 26:SM:62:VAL:HG12 | 1.82 | 0.62 |
| 38:Pt:23:C:H2' | 38:Pt:24:A:H8 | 1.64 | 0.62 |
| 4:SE:38:LEU:HD22 | 19:S2:346:C:H5" | 1.82 | 0.62 |
| 19:S2:300:U:H2' | 19:S2:301:A:H8 | 1.65 | 0.62 |
| 26:SM:36:ARG:NH1 | 35:Sf:105:TYR:OH | 2.32 | 0.62 |
| 40:L5:3930:U:H3 | 40:L5:4180:G:H1 | 1.48 | 0.62 |
| 40:L5:4541:G:N2 | 40:L5:4544:A:OP2 | 2.33 | 0.62 |
| 24:SF:39:ILE:HD12 | 24:SF:68:ILE:HD12 | 1.82 | 0.62 |
| 28:SQ:43:GLU:OE2 | 28:SQ:77:HIS:ND1 | 2.33 | 0.62 |
| 40:L5:1382:G:H2' | 40:L5:1383:G:H8 | 1.64 | 0.62 |
| 19:S2:1183:A:H2' | 19:S2:1184:G:H8 | 1.63 | 0.61 |
| 21:LW:116:LYS:HA | 21:LW:119:LYS:HE2 | 1.81 | 0.61 |
| 28:SQ:32:ILE:HG12 | 28:SQ:68:ILE:HD12 | 1.82 | 0.61 |
| 40:L5:1185:G:N2 | 46:LD:282:GLN:OE1 | 2.33 | 0.61 |
| 40:L5:3664:G:H2' | 40:L5:3665:G:H8 | 1.64 | 0.61 |
| 40:L5:4084:G:N7 | 43:LA:72:ARG:NH2 | 2.45 | 0.61 |
| 66:La:89:ASN:HA | 66:La:92:LYS:HE3 | 1.80 | 0.61 |
| 14:SX:68:LYS:HG3 | 18:Se:6:LEU:HD23 | 1.81 | 0.61 |
| 19:S2:1550:G:H3' | 19:S2:1579:A:H61 | 1.65 | 0.61 |
| 36:Sg:99:ARG:NH1 | 36:Sg:134:THR:O | 2.33 | 0.61 |
| 40:L5:3921:U:H1' | 40:L5:4543:G:H21 | 1.65 | 0.61 |
| 43:LA:101:VAL:HG22 | 43:LA:165:VAL:HG22 | 1.83 | 0.61 |
| 83:Ls:50:LYS:NZ | 83:Ls:91:THR:OG1 | 2.32 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 17:Sb:33:MET:HB2 | 17:Sb:79:PHE:HB2 | 1.82 | 0.61 |
| 40:L5:1516:G:O2' | 53:LL:18:TRP:NE1 | 2.33 | 0.61 |
| 83:Ls:175:LEU:HD21 | 83:Ls:182:PRO:HB3 | 1.81 | 0.61 |
| 9:SL:7:GLU:OE2 | 9:SL:11:GLN:NE2 | 2.33 | 0.61 |
| 16:Sa:11:ALA:O | 16:Sa:15:ARG:NH2 | 2.33 | 0.61 |
| 19:S2:104:A:N6 | 19:S2:356:C:O2 | 2.33 | 0.61 |
| 19:S2:1528:G:O2' | 19:S2:1666:C:OP1 | 2.17 | 0.61 |
| 40:L5:184:U:O2 | 40:L5:254:G:O6 | 2.18 | 0.61 |
| 40:L5:1335:G:H21 | 45:LC:95:MET:HB2 | 1.64 | 0.61 |
| 27:SP:56:LEU:HD22 | 27:SP:80:LEU:HD11 | 1.81 | 0.61 |
| 40:L5:1850:A:N3 | 40:L5:2283:G:O2' | 2.32 | 0.61 |
| 40:L5:3907:G:N2 | 90:L5:5294:HMT:O8 | 2.34 | 0.61 |
| 1:SA:85:ARG:HD3 | 1:SA:203:PHE:O | 2.01 | 0.61 |
| 20:LR:173:ARG:O | 20:LR:176:ARG:NH1 | 2.33 | 0.61 |
| 40:L5:436:C:H2' | 40:L5:437:G:H8 | 1.66 | 0.61 |
| 40:L5:691:C:H2' | 40:L5:692:A:H8 | 1.65 | 0.61 |
| 40:L5:1933:G:H2' | 40:L5:1934:A:C8 | 2.35 | 0.61 |
| 4:SE:42:LEU:HG | 4:SE:109:PHE:HD2 | 1.65 | 0.61 |
| 5:SG:159:ARG:HH12 | 19:S2:76:U:H2' | 1.65 | 0.61 |
| 40:L5:4221:C:OP1 | 87:L5:5262:SPM:N14 | 2.34 | 0.61 |
| 40:L5:4322:G:N2 | 40:L5:4325:A:OP2 | 2.32 | 0.61 |
| 43:LA:229:ALA:HB3 | 43:LA:234:LYS:HB3 | 1.83 | 0.61 |
| 81:Lp:38:THR:HA | 81:Lp:45:THR:HA | 1.83 | 0.61 |
| 7:SI:168:GLN:OE1 | 40:L5:5027:C:N4 | 2.34 | 0.61 |
| 30:ST:102:ARG:HA | 30:ST:105:GLN:HB2 | 1.82 | 0.61 |
| 40:L5:2295:C:H2' | 40:L5:2296:G:H8 | 1.66 | 0.61 |
| 40:L5:1457:G:O2' | 58:LQ:75:ARG:NH2 | 2.34 | 0.61 |
| 17:Sb:11:SER:OG | 17:Sb:14:GLU:OE1 | 2.19 | 0.60 |
| 23:SD:204:LEU:HB2 | 23:SD:207:HIS:HB3 | 1.82 | 0.60 |
| 40:L5:511:C:OP2 | 53:LL:163:LYS:NZ | 2.33 | 0.60 |
| 40:L5:1971:C:N4 | 40:L5:1972:G:O6 | 2.34 | 0.60 |
| 40:L5:1972:G:N1 | 40:L5:1995:G:O6 | 2.34 | 0.60 |
| 40:L5:1354:A:N6 | 40:L5:1503:A:O4' | 2.34 | 0.60 |
| 6:SH:105:THR:HG23 | 6:SH:107:LYS:H | 1.65 | 0.60 |
| 19:S2:1231:C:H42 | 19:S2:1527:C:H42 | 1.47 | 0.60 |
| 40:L5:966:A:H5" | 40:L5:2092:G:H22 | 1.66 | 0.60 |
| 40:L5:2033:A:OP1 | 51:LI:162:ARG:NH2 | 2.34 | 0.60 |
| 40:L5:2588:C:OP1 | 40:L5:2768:C:O2' | 2.18 | 0.60 |
| 48:LF:105:VAL:HG13 | 48:LF:136:VAL:HG12 | 1.84 | 0.60 |
| 61:LU:65:ARG:HG2 | 61:LU:67:LYS:H | 1.64 | 0.60 |
| 19:S2:1222:G:H5" | 24:SF:78:MET:HE3 | 1.83 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1228:A:H2' | 19:S2:1229:G:C8 | 2.36 | 0.60 |
| 40:L5:62:A:N3 | 40:L5:77:U:O2' | 2.31 | 0.60 |
| 40:L5:3772:U:H3 | 40:L5:3776:G:H22 | 1.49 | 0.60 |
| 42:L8:153:C:H2' | 42:L8:154:G:H8 | 1.67 | 0.60 |
| 19:S2:323:C:H2' | 19:S2:327:G:H1 | 1.66 | 0.60 |
| 19:S2:1841:C:H2' | 19:S2:1842:4AC:H6 | 1.83 | 0.60 |
| 34:Sd:22:ARG:NE | 34:Sd:36:LEU:O | 2.32 | 0.60 |
| 36:Sg:208:ALA:HB2 | 36:Sg:218:LEU:HD13 | 1.83 | 0.60 |
| 40:L5:148:C:OP2 | 49:LG:197:LYS:NZ | 2.34 | 0.60 |
| 40:L5:2325:C:O2' | 70:Le:124:ASN:ND2 | 2.34 | 0.60 |
| 4:SE:44:LEU:HD11 | 4:SE:72:ILE:HD11 | 1.84 | 0.60 |
| 5:SG:66:GLY:HA2 | 19:S2:1745:A:H1' | 1.81 | 0.60 |
| 10:SN:124:ARG:NH2 | 19:S2:1024:A:OP2 | 2.30 | 0.60 |
| 40:L5:644:G:OP1 | 53:LL:162:LYS:NZ | 2.31 | 0.60 |
| 40:L5:1669:A:N3 | 40:L5:1852:U:O2' | 2.33 | 0.60 |
| 40:L5:907:C:H2' | 40:L5:908:G:H8 | 1.66 | 0.60 |
| 46:LD:64:ILE:HD13 | 46:LD:109:LEU:HD22 | 1.84 | 0.60 |
| 3:SC:169:TYR:OH | 3:SC:175:GLY:O | 2.17 | 0.60 |
| 38:Pt:23:C:H2' | 38:Pt:24:A:C8 | 2.36 | 0.60 |
| 2:SB:114:VAL:O | 19:S2:1869:A:N6 | 2.35 | 0.60 |
| 28:SQ:117:ARG:HH21 | 28:SQ:121:VAL:HG21 | 1.66 | 0.60 |
| 36:Sg:40:ILE:HB | 36:Sg:59:LEU:HB2 | 1.83 | 0.60 |
| 36:Sg:201:SER:HG | 36:Sg:205:SER:H | 1.50 | 0.60 |
| 40:L5:940:C:OP1 | 48:LF:242:ARG:NH2 | 2.35 | 0.60 |
| 40:L5:3917:A:H2' | 40:L5:3918:G:H8 | 1.67 | 0.60 |
| 40:L5:4347:G:H2' | 40:L5:4348:A:C8 | 2.37 | 0.60 |
| 40:L5:4457:PSU:OP1 | 62:LV:50:ASN:ND2 | 2.35 | 0.60 |
| 84:Lt:134:GLY:HA3 | 84:Lt:152:ILE:HD11 | 1.83 | 0.60 |
| 16:Sa:38:LYS:HB2 | 16:Sa:71:LEU:HB2 | 1.82 | 0.60 |
| 40:L5:1346:C:H2' | 40:L5:1347:G:H8 | 1.66 | 0.60 |
| 40:L5:2623:A:OP1 | 61:LU:101:ARG:NE | 2.35 | 0.60 |
| 40:L5:4742:G:OP1 | 40:L5:4900:C:N4 | 2.33 | 0.60 |
| 1:SA:68:ILE:HG22 | 1:SA:70:ASN:H | 1.67 | 0.59 |
| 1:SA:222:VAL:HG13 | 1:SA:223:THR:HG23 | 1.83 | 0.59 |
| 36:Sg:10:THR:HG22 | 36:Sg:308:ARG:HG2 | 1.82 | 0.59 |
| 40:L5:305:A:OP2 | 55:LN:15:GLN:NE2 | 2.32 | 0.59 |
| 40:L5:2579:G:N2 | 40:L5:2582:A:OP2 | 2.35 | 0.59 |
| 40:L5:5055:G:N2 | 69:Ld:118:GLN:OE1 | 2.31 | 0.59 |
| 43:LA:20:VAL:HA | 43:LA:23:ARG:HG3 | 1.83 | 0.59 |
| 67:Lb:116:LEU:HG | 67:Lb:117:ARG:HH21 | 1.66 | 0.59 |
| 19:S2:1854:U:H2' | 19:S2:1855:G:H8 | 1.66 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 24:SF:101:HIS:HB2 | 24:SF:108:PRO:HG3 | 1.83 | 0.59 |
| 24:SF:127:ARG:HG3 | 24:SF:136:ARG:HB3 | 1.84 | 0.59 |
| 33:Sc:29:GLN:NE2 | 33:Sc:66:ARG:O | 2.35 | 0.59 |
| 40:L5:654:C:H4' | 45:LC:269:LYS:HD3 | 1.84 | 0.59 |
| 40:L5:3873:G:H2' | 40:L5:3874:G:C8 | 2.37 | 0.59 |
| 40:L5:4910:G:N2 | 56:LO:106:ASP:O | 2.34 | 0.59 |
| 76:Lk:25:ILE:HB | 76:Lk:68:GLU:HG2 | 1.85 | 0.59 |
| 6:SH:31:GLU:HA | 6:SH:37:LYS:HG3 | 1.83 | 0.59 |
| 7:SI:9:HIS:HE1 | 19:S2:386:C:H4' | 1.66 | 0.59 |
| 8:SJ:63:LEU:O | 8:SJ:70:ARG:NH1 | 2.34 | 0.59 |
| 19:S2:1446:A:H5" | 31:SU:58:THR:HG23 | 1.84 | 0.59 |
| 19:S2:1452:A:OP2 | 22:SR:32:LYS:NZ | 2.34 | 0.59 |
| 40:L5:1818:G:OP2 | 40:L5:1818:G:N2 | 2.33 | 0.59 |
| 42:L8:14:U:H5" | 57:LP:123:PRO:HG3 | 1.84 | 0.59 |
| 80:Lo:2:VAL:N | 80:Lo:90:HIS:O | 2.35 | 0.59 |
| 82:Lr:16:PHE:HB3 | 82:Lr:27:THR:H | 1.67 | 0.59 |
| 5:SG:94:ARG:NH2 | 19:S2:454:U:O2' | 2.36 | 0.59 |
| 19:S2:94:G:HO2' | 19:S2:508:A:HO2' | 1.48 | 0.59 |
| 19:S2:1336:C:O3' | 34:Sd:44:ARG:NH2 | 2.35 | 0.59 |
| 19:S2:1568:C:H2' | 19:S2:1569:A:C8 | 2.38 | 0.59 |
| 40:L5:691:C:H2' | 40:L5:692:A:C8 | 2.37 | 0.59 |
| 40:L5:4861:G:H2' | 40:L5:4862:G:H8 | 1.67 | 0.59 |
| 19:S2:475:C:O2' | 19:S2:507:G:N3 | 2.34 | 0.59 |
| 36:Sg:196:ASN:ND2 | 36:Sg:236:ILE:O | 2.34 | 0.59 |
| 40:L5:2483:G:O6 | 40:L5:2495:U:O4 | 2.21 | 0.59 |
| 5:SG:145:PHE:O | 21:LW:101:ARG:NH2 | 2.35 | 0.59 |
| 14:SX:68:LYS:NZ | 19:S2:616:A:OP1 | 2.35 | 0.59 |
| 19:S2:629:A:O2' | 19:S2:631:U:OP1 | 2.21 | 0.59 |
| 19:S2:1130:G:N2 | 19:S2:1130:G:OP2 | 2.35 | 0.59 |
| 19:S2:1658:G:OP2 | 19:S2:1660:C:N4 | 2.35 | 0.59 |
| 24:SF:126:THR:HA | 24:SF:135:ARG:HD2 | 1.85 | 0.59 |
| 40:L5:97:G:OP1 | 53:LL:16:LYS:NZ | 2.31 | 0.59 |
| 40:L5:1667:G:H21 | 40:L5:2282:A:H62 | 1.49 | 0.59 |
| 40:L5:4129:G:O6 | 40:L5:4156:G:N2 | 2.36 | 0.59 |
| 17:Sb:72:ARG:HH22 | 19:S2:1120:U:H5' | 1.67 | 0.59 |
| 36:Sg:89:LEU:HB2 | 36:Sg:101:PHE:HE1 | 1.65 | 0.59 |
| 46:LD:19:LYS:O | 46:LD:24:ARG:NH1 | 2.34 | 0.59 |
| 3:SC:168:GLY:N | 3:SC:179:THR:O | 2.30 | 0.59 |
| 28:SQ:58:LEU:HD13 | 28:SQ:108:ILE:HD11 | 1.85 | 0.59 |
| 40:L5:709:C:OP1 | 71:Lf:46:ARG:NH2 | 2.36 | 0.59 |
| 40:L5:3861:A:H2' | 40:L5:3862:A:H8 | 1.67 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 88:L5:5291:SPD:N6 | 55:LN:70:GLY:O | 2.36 | 0.59 |
| 49:LG:105:GLU:OE2 | 49:LG:113:ARG:NH2 | 2.36 | 0.59 |
| 49:LG:200:THR:HG22 | 49:LG:201:THR:HG23 | 1.85 | 0.59 |
| 6:SH:53:VAL:HG11 | 6:SH:172:THR:HA | 1.85 | 0.59 |
| 7:SI:81:VAL:HG22 | 7:SI:102:VAL:HG12 | 1.85 | 0.59 |
| 15:SY:41:ARG:HG3 | 15:SY:55:ILE:HB | 1.84 | 0.59 |
| 19:S2:1630:A:O2' | 29:SS:85:ASN:ND2 | 2.36 | 0.59 |
| 40:L5:1976:G:H1 | 40:L5:1990:A:H2 | 1.50 | 0.59 |
| 40:L5:4246:G:H2' | 40:L5:4247:G:H8 | 1.68 | 0.59 |
| 40:L5:4762:A:OP2 | 56:LO:12:ARG:NH1 | 2.36 | 0.59 |
| 19:S2:1563:G:H5" | 30:ST:121:ARG:HH21 | 1.67 | 0.59 |
| 19:S2:1647:A:OP1 | 28:SQ:138:ARG:NH2 | 2.36 | 0.59 |
| 19:S2:1858:G:H2' | 19:S2:1859:A:H8 | 1.68 | 0.59 |
| 40:L5:1323:A2M:H2' | 40:L5:1324:A:O4' | 2.02 | 0.59 |
| 40:L5:2908:U:O2' | 40:L5:3586:G:O6 | 2.19 | 0.59 |
| 40:L5:3726:A:O2' | 40:L5:3727:A:O5' | 2.21 | 0.59 |
| 40:L5:4238:G:H2' | 40:L5:4239:A:H8 | 1.67 | 0.59 |
| 46:LD:287:PHE:HZ | 51:LI:214:SER:HB3 | 1.68 | 0.59 |
| 2:SB:150:ILE:HG12 | 19:S2:1124:C:H5" | 1.85 | 0.58 |
| 6:SH:12:ASN:ND2 | 6:SH:14:GLU:OE1 | 2.36 | 0.58 |
| 40:L5:1207:C:H2' | 40:L5:1208:G:H8 | 1.67 | 0.58 |
| 40:L5:1927:U:OP1 | 40:L5:1949:U:O2' | 2.14 | 0.58 |
| 60:LT:88:ARG:NH1 | 67:Lb:33:LYS:O | 2.36 | 0.58 |
| 8:SJ:162:ARG:NH2 | 19:S2:583:A:OP1 | 2.36 | 0.58 |
| 19:S2:1851:MA6:OP1 | 79:Ln:9:ARG:NH2 | 2.35 | 0.58 |
| 37:At:68:G:H2' | 37:At:69:A:H8 | 1.69 | 0.58 |
| 40:L5:1188:C:H2' | 40:L5:1189:G:C8 | 2.38 | 0.58 |
| 83:Ls:96:THR:HG22 | 83:Ls:99:ARG:HH21 | 1.67 | 0.58 |
| 40:L5:1594:C:HO2' | 40:L5:1597:G:HO2' | 1.52 | 0.58 |
| 40:L5:2758:G:O2' | 40:L5:2765:A:N3 | 2.34 | 0.58 |
| 40:L5:4761:G:OP2 | 56:LO:37:ARG:NH2 | 2.36 | 0.58 |
| 4:SE:45:ILE:HG13 | 4:SE:61:VAL:HG11 | 1.85 | 0.58 |
| 19:S2:146:G:H2' | 19:S2:147:A:H8 | 1.68 | 0.58 |
| 19:S2:1069:U:H5" | 43:LA:248:GLY:HA2 | 1.85 | 0.58 |
| 40:L5:1670:G:OP1 | 67:Lb:12:GLN:NE2 | 2.33 | 0.58 |
| 40:L5:4077:A:N1 | 40:L5:4171:C:N4 | 2.50 | 0.58 |
| 7:SI:31:ARG:NH2 | 19:S2:381:C:OP1 | 2.37 | 0.58 |
| 19:S2:1616:U:O2' | 19:S2:1661:A:N3 | 2.32 | 0.58 |
| 19:S2:1644:C:H4' | 28:SQ:140:ARG:HB2 | 1.86 | 0.58 |
| 19:S2:1706:G:O2' | 19:S2:1850:MA6:O2' | 2.19 | 0.58 |
| 40:L5:4887:C:N4 | 40:L5:4932:U:H3 | 1.99 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 51:LI:61:SER:HA | 51:LI:126:VAL:HG12 | 1.84 | 0.58 |
| 5:SG:59:GLN:OE1 | 5:SG:72:ARG:NH2 | 2.36 | 0.58 |
| 37:At:6:C:H2' | 37:At:7:G:H8 | 1.69 | 0.58 |
| 40:L5:1906:U:H2' | 40:L5:1907:A:H8 | 1.68 | 0.58 |
| 40:L5:3717:A:OP2 | 40:L5:3735:G:N2 | 2.35 | 0.58 |
| 40:L5:5047:C:O2' | 40:L5:5050:C:OP2 | 2.22 | 0.58 |
| 55:LN:155:VAL:O | 55:LN:162:ARG:NH2 | 2.37 | 0.58 |
| 8:SJ:124:HIS:CG | 18:Se:35:ARG:HE | 2.21 | 0.58 |
| 19:S2:1598:G:N2 | 19:S2:1599:U:O4 | 2.36 | 0.58 |
| 19:S2:1598:G:O2' | 32:SZ:80:ARG:O | 2.20 | 0.58 |
| 40:L5:4637:OMG:OP1 | 69:Ld:30:HIS:NE2 | 2.37 | 0.58 |
| 40:L5:4694:G:O2' | 50:LH:71:ARG:NH2 | 2.33 | 0.58 |
| 16:Sa:28:ARG:NH2 | 19:S2:1839:U:O4 | 2.29 | 0.58 |
| 19:S2:1673:U:H5" | 28:SQ:78:VAL:HG12 | 1.85 | 0.58 |
| 36:Sg:129:ILE:HB | 36:Sg:142:VAL:HB | 1.84 | 0.58 |
| 40:L5:172:C:H4' | 40:L5:173:C:H5' | 1.86 | 0.58 |
| 40:L5:1495:G:H4' | 58:LQ:187:LYS:HE3 | 1.86 | 0.58 |
| 40:L5:2753:G:H2' | 40:L5:2754:G:C4 | 2.39 | 0.58 |
| 64:LY:10:ASP:HB3 | 64:LY:13:LYS:HB2 | 1.86 | 0.58 |
| 5:SG:91:GLU:OE1 | 19:S2:452:G:O2' | 2.22 | 0.58 |
| 6:SH:10:LYS:HE3 | 6:SH:17:ASP:HB3 | 1.84 | 0.58 |
| 15:SY:107:ARG:NH2 | 19:S2:492:C:OP2 | 2.37 | 0.58 |
| 16:Sa:89:ARG:HG3 | 16:Sa:92:ARG:HH21 | 1.69 | 0.58 |
| 18:Se:34:ARG:HH21 | 19:S2:642:U:H5 | 1.50 | 0.58 |
| 19:S2:645:C:H2' | 19:S2:646:G:H8 | 1.69 | 0.58 |
| 19:S2:696:G:N2 | 19:S2:730:C:OP2 | 2.36 | 0.58 |
| 40:L5:2411:C:H2' | 40:L5:2412:A:H8 | 1.68 | 0.58 |
| 40:L5:2884:G:H2' | 40:L5:2885:A:H8 | 1.68 | 0.58 |
| 40:L5:3880:G:H2' | 40:L5:3881:G:C8 | 2.39 | 0.58 |
| 43:LA:107:MET:HB3 | 43:LA:111:THR:HG21 | 1.86 | 0.58 |
| 4:SE:94:LYS:NZ | 15:SY:19:GLN:OE1 | 2.36 | 0.58 |
| 5:SG:134:GLY:O | 19:S2:65:C:N4 | 2.35 | 0.58 |
| 13:SW:111:MET:HE3 | 13:SW:116:ALA:HA | 1.84 | 0.58 |
| 19:S2:691:G:N7 | 19:S2:692:G:N2 | 2.52 | 0.58 |
| 19:S2:1146:C:O2' | 19:S2:1150:A:N1 | 2.35 | 0.58 |
| 19:S2:1337:4AC:H2' | 19:S2:1338:G:C8 | 2.39 | 0.58 |
| 40:L5:2845:A:N6 | 40:L5:3843:C:H42 | 2.02 | 0.58 |
| 47:LE:278:THR:HG22 | 47:LE:280:GLY:H | 1.68 | 0.58 |
| 52:LJ:146:ARG:HG2 | 52:LJ:147:ARG:HG3 | 1.86 | 0.58 |
| 19:S2:1562:C:H2' | 19:S2:1563:G:C8 | 2.39 | 0.57 |
| 24:SF:17:ILE:HG21 | 24:SF:46:ALA:HB1 | 1.86 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 36:Sg:130:LYS:HG2 | 36:Sg:141:THR:HG22 | 1.86 | 0.57 |
| 13:SW:18:GLU:HG3 | 13:SW:69:LEU:HB3 | 1.85 | 0.57 |
| 14:SX:95:GLU:OE2 | 14:SX:140:ARG:NH2 | 2.35 | 0.57 |
| 16:Sa:5:ARG:HH21 | 19:S2:1864:U:H3' | 1.69 | 0.57 |
| 19:S2:1030:A:H2' | 19:S2:1031:A2M:H8 | 1.86 | 0.57 |
| 19:S2:1606:G:O2' | 19:S2:1632:G:N2 | 2.35 | 0.57 |
| 20:LR:169:ALA:HA | 20:LR:172:ARG:HE | 1.69 | 0.57 |
| 38:Pt:8:U:O2' | 38:Pt:21:A:N1 | 2.34 | 0.57 |
| 40:L5:416:U:H4' | 40:L5:2330:G:H4' | 1.86 | 0.57 |
| 40:L5:2088:A:OP2 | 58:LQ:37:ARG:NH2 | 2.38 | 0.57 |
| 40:L5:3746:A:H5" | 43:LA:244:GLY:HA3 | 1.86 | 0.57 |
| 40:L5:4604:G:N2 | 40:L5:4607:A:OP2 | 2.36 | 0.57 |
| 47:LE:261:ILE:HG23 | 47:LE:267:LEU:HD23 | 1.86 | 0.57 |
| 77:Ll:33:ASN:ND2 | 77:Ll:35:ILE:O | 2.37 | 0.57 |
| 10:SN:14:SER:HB3 | 19:S2:1016:U:H5" | 1.86 | 0.57 |
| 19:S2:527:C:H2' | 19:S2:528:A:C8 | 2.38 | 0.57 |
| 19:S2:1010:G:H2' | 19:S2:1011:A:H8 | 1.69 | 0.57 |
| 40:L5:4377:G:O6 | 66:La:42:ARG:NH1 | 2.38 | 0.57 |
| 40:L5:4991:U:H2' | 40:L5:4992:G:C8 | 2.39 | 0.57 |
| 43:LA:206:PRO:HG3 | 43:LA:213:GLY:HA3 | 1.86 | 0.57 |
| 44:LB:393:LYS:HG3 | 44:LB:396:ARG:HH21 | 1.70 | 0.57 |
| 19:S2:1755:C:H2' | 19:S2:1756:C:C6 | 2.39 | 0.57 |
| 26:SM:58:GLU:OE1 | 26:SM:61:TYR:N | 2.37 | 0.57 |
| 40:L5:1390:G:N2 | 40:L5:1393:G:OP2 | 2.31 | 0.57 |
| 45:LC:67:TRP:HB3 | 45:LC:71:ARG:HD3 | 1.85 | 0.57 |
| 56:LO:126:VAL:HG13 | 56:LO:127:VAL:HG13 | 1.85 | 0.57 |
| 4:SE:187:ALA:N | 19:S2:809:A:OP1 | 2.34 | 0.57 |
| 19:S2:1720:U:O2' | 40:L5:3796:U:O2' | 2.19 | 0.57 |
| 40:L5:424:U:H3 | 42:L8:10:G:H1 | 1.51 | 0.57 |
| 40:L5:4194:U:O2' | 51:LI:116:ARG:NH2 | 2.38 | 0.57 |
| 42:L8:13:G:O2' | 57:LP:121:LYS:O | 2.19 | 0.57 |
| 50:LH:115:ARG:HD3 | 50:LH:123:ILE:HD12 | 1.84 | 0.57 |
| 62:LV:83:ARG:HB2 | 62:LV:102:ALA:HB3 | 1.84 | 0.57 |
| 2:SB:149:GLN:NE2 | 19:S2:1123:C:OP1 | 2.38 | 0.57 |
| 19:S2:1314:U:H4' | 25:SK:8:ARG:HH21 | 1.69 | 0.57 |
| 40:L5:1358:G:OP1 | 45:LC:117:THR:N | 2.37 | 0.57 |
| 40:L5:3896:C:O2 | 44:LB:268:ARG:NH2 | 2.38 | 0.57 |
| 42:L8:19:C:H2' | 42:L8:20:A:H8 | 1.68 | 0.57 |
| 43:LA:172:GLY:HA3 | 81:Lp:73:THR:HG21 | 1.87 | 0.57 |
| 1:SA:212:LYS:O | 1:SA:215:GLN:NE2 | 2.37 | 0.57 |
| 5:SG:129:VAL:O | 21:LW:80:ARG:NH2 | 2.35 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 10:SN:2:GLY:N | 19:S2:923:G:OP1 | 2.38 | 0.57 |
| 10:SN:66:VAL:HG13 | 10:SN:67:THR:HG23 | 1.87 | 0.57 |
| 11:SO:143:LYS:HB2 | 19:S2:1047:C:H5" | 1.86 | 0.57 |
| 19:S2:472:C:O2 | 19:S2:475:C:N4 | 2.37 | 0.57 |
| 36:Sg:226:HIS:NE2 | 36:Sg:229:THR:OG1 | 2.35 | 0.57 |
| 40:L5:4251:A:H5" | 52:LJ:108:GLY:HA3 | 1.86 | 0.57 |
| 11:SO:150:ARG:NH2 | 19:S2:1854:U:OP1 | 2.38 | 0.57 |
| 29:SS:22:GLY:HA2 | 29:SS:56:ALA:HB3 | 1.87 | 0.57 |
| 40:L5:85:G:O2' | 40:L5:97:G:O6 | 2.21 | 0.57 |
| 40:L5:512:U:O4 | 40:L5:647:G:O6 | 2.21 | 0.57 |
| 40:L5:697:G:H2' | 40:L5:698:G:H8 | 1.70 | 0.57 |
| 40:L5:1514:U:H2' | 40:L5:1515:A:H8 | 1.69 | 0.57 |
| 45:LC:39:PHE:O | 45:LC:43:ASN:ND2 | 2.37 | 0.57 |
| 15:SY:55:ILE:HG23 | 15:SY:75:ILE:HG22 | 1.87 | 0.57 |
| 19:S2:909:G:OP1 | 20:LR:172:ARG:NH1 | 2.38 | 0.57 |
| 19:S2:1228:A:H2' | 19:S2:1229:G:H8 | 1.69 | 0.57 |
| 19:S2:1495:G:N2 | 34:Sd:42:CYS:SG | 2.68 | 0.57 |
| 19:S2:1651:A:H2' | 19:S2:1652:G:H8 | 1.70 | 0.57 |
| 40:L5:1095:A:H2 | 40:L5:1200:G:C2 | 2.23 | 0.57 |
| 40:L5:1950:U:H2' | 40:L5:1951:G:H8 | 1.70 | 0.57 |
| 44:LB:50:LYS:HB2 | 44:LB:345:LEU:HD11 | 1.87 | 0.57 |
| 40:L5:469:C:N3 | 47:LE:105:ARG:NH2 | 2.45 | 0.57 |
| 40:L5:2348:G:OP1 | 40:L5:2351:OMC:N4 | 2.38 | 0.57 |
| 40:L5:4670:C:O2' | 40:L5:4672:A:OP2 | 2.23 | 0.57 |
| 42:L8:67:U:H2' | 42:L8:68:G:H8 | 1.70 | 0.57 |
| 4:SE:131:VAL:HA | 4:SE:137:PRO:HA | 1.87 | 0.56 |
| 10:SN:46:THR:HB | 10:SN:86:GLU:HG3 | 1.86 | 0.56 |
| 16:Sa:11:ALA:H | 16:Sa:33:ASP:HB2 | 1.69 | 0.56 |
| 19:S2:110:U:O2 | 19:S2:351:G:N2 | 2.33 | 0.56 |
| 19:S2:1337:4AC:H2' | 19:S2:1338:G:H8 | 1.70 | 0.56 |
| 19:S2:1595:U:H2' | 19:S2:1596:U:C6 | 2.40 | 0.56 |
| 40:L5:13:U:OP2 | 88:L8:203:SPD:N10 | 2.37 | 0.56 |
| 40:L5:2317:C:OP1 | 70:Le:14:LYS:NZ | 2.38 | 0.56 |
| 40:L5:3855:C:H2' | 40:L5:3856:A:H8 | 1.70 | 0.56 |
| 40:L5:4094:G:N2 | 40:L5:4115:G:OP2 | 2.38 | 0.56 |
| 48:LF:236:ARG:HB2 | 48:LF:239:GLN:HB2 | 1.87 | 0.56 |
| 50:LH:95:VAL:HG12 | 78:Lm:82:LEU:HD13 | 1.87 | 0.56 |
| 19:S2:556:U:H3' | 19:S2:557:U:H4' | 1.86 | 0.56 |
| 36:Sg:106:LYS:HE3 | 36:Sg:126:ASP:HA | 1.86 | 0.56 |
| 40:L5:2406:G:N7 | 77:Ll:2:SER:N | 2.53 | 0.56 |
| 1:SA:210:ILE:HG12 | 22:SR:80:ARG:HE | 1.68 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 8:SJ:134:HIS:NE2 | 19:S2:561:A:O2' | 2.37 | 0.56 |
| 19:S2:13:C:O2' | 19:S2:1356:G:N2 | 2.38 | 0.56 |
| 19:S2:1455:A:H2' | 19:S2:1456:G:H8 | 1.70 | 0.56 |
| 25:SK:18:GLU:HB2 | 25:SK:93:THR:HG23 | 1.86 | 0.56 |
| 38:Pt:50:U:H3 | 38:Pt:64:G:H1 | 1.52 | 0.56 |
| 40:L5:20:U:OP2 | 42:L8:36:G:N2 | 2.35 | 0.56 |
| 40:L5:22:G:OP1 | 75:Lj:44:LYS:N | 2.39 | 0.56 |
| 40:L5:956:A:H1' | 40:L5:2076:G:H5" | 1.88 | 0.56 |
| 40:L5:1521:C:OP1 | 45:LC:100:ARG:NH2 | 2.32 | 0.56 |
| 40:L5:1730:U:H1' | 60:LT:101:SER:HB3 | 1.88 | 0.56 |
| 40:L5:1795:A:N3 | 41:L7:79:U:O2' | 2.38 | 0.56 |
| 40:L5:1845:U:H2' | 40:L5:1846:G:H8 | 1.71 | 0.56 |
| 40:L5:2544:G:H22 | 42:L8:124:U:H5' | 1.70 | 0.56 |
| 40:L5:3687:A:O2' | 43:LA:236:GLY:N | 2.38 | 0.56 |
| 40:L5:4177:C:H2' | 40:L5:4178:A:H8 | 1.70 | 0.56 |
| 40:L5:4985:U:O2 | 44:LB:174:ARG:NH1 | 2.33 | 0.56 |
| 42:L8:96:C:H5" | 73:Lh:66:LYS:HG2 | 1.88 | 0.56 |
| 43:LA:114:CYS:HB3 | 43:LA:165:VAL:HB | 1.87 | 0.56 |
| 44:LB:36:ASP:OD2 | 44:LB:38:SER:OG | 2.23 | 0.56 |
| 44:LB:222:VAL:O | 44:LB:343:ARG:NH1 | 2.38 | 0.56 |
| 7:SI:4:SER:OG | 7:SI:6:ASP:OD2 | 2.22 | 0.56 |
| 9:SL:135:SER:O | 9:SL:139:ARG:NH1 | 2.38 | 0.56 |
| 19:S2:145:G:H2' | 19:S2:146:G:C8 | 2.40 | 0.56 |
| 19:S2:1737:G:H1 | 19:S2:1797:U:H3 | 1.54 | 0.56 |
| 19:S2:1777:G:H2' | 19:S2:1778:C:H6 | 1.70 | 0.56 |
| 40:L5:1541:C:H1' | 40:L5:2448:G:H21 | 1.70 | 0.56 |
| 40:L5:2520:C:H2' | 40:L5:2521:G:H8 | 1.69 | 0.56 |
| 40:L5:4620:OMU:OP2 | 40:L5:4670:C:N4 | 2.39 | 0.56 |
| 53:LL:119:GLU:HG2 | 53:LL:123:LYS:HD2 | 1.85 | 0.56 |
| 64:LY:33:PRO:HG2 | 64:LY:105:VAL:HG12 | 1.88 | 0.56 |
| 34:Sd:22:ARG:HG3 | 34:Sd:23:VAL:HG23 | 1.86 | 0.56 |
| 40:L5:1259:G:H2' | 40:L5:1260:G:H8 | 1.70 | 0.56 |
| 40:L5:2275:G:H2' | 40:L5:2276:A:C8 | 2.40 | 0.56 |
| 40:L5:3933:G:H2' | 40:L5:3934:G:H8 | 1.70 | 0.56 |
| 40:L5:4239:A:H2' | 40:L5:4240:G:C8 | 2.41 | 0.56 |
| 59:LS:147:ASP:HB3 | 59:LS:150:ILE:HB | 1.88 | 0.56 |
| 8:SJ:164:PRO:HG2 | 19:S2:561:A:H5" | 1.88 | 0.56 |
| 19:S2:981:A:H2' | 19:S2:982:G:C8 | 2.41 | 0.56 |
| 40:L5:120:A:N1 | 40:L5:148:C:O2' | 2.38 | 0.56 |
| 42:L8:95:A:N3 | 73:Lh:63:GLN:NE2 | 2.53 | 0.56 |
| 71:Lf:15:LYS:HB3 | 71:Lf:25:THR:HG23 | 1.88 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 13:SW:52:ILE:HG23 | 13:SW:61:ILE:HG12 | 1.86 | 0.56 |
| 18:Se:31:ARG:NH2 | 19:S2:525:A:O3' | 2.39 | 0.56 |
| 19:S2:804:U:H3 | 19:S2:859:G:H1 | 1.53 | 0.56 |
| 19:S2:948:C:H2' | 19:S2:949:G:H8 | 1.70 | 0.56 |
| 20:LR:88:ARG:O | 40:L5:2725:A:N6 | 2.38 | 0.56 |
| 40:L5:109:G:OP2 | 53:LL:74:ARG:NH2 | 2.37 | 0.56 |
| 40:L5:184:U:O2 | 40:L5:254:G:C6 | 2.59 | 0.56 |
| 40:L5:246:G:H2' | 40:L5:247:G:H8 | 1.71 | 0.56 |
| 40:L5:659:G:H2' | 40:L5:660:A:H8 | 1.70 | 0.56 |
| 40:L5:2903:G:H1' | 40:L5:2904:U:H5 | 1.69 | 0.56 |
| 40:L5:4353:PSU:H5' | 40:L5:4354:U:H5' | 1.86 | 0.56 |
| 40:L5:4532:PSU:OP2 | 40:L5:4554:G:N1 | 2.39 | 0.56 |
| 48:LF:127:LYS:HB2 | 60:LT:133:ALA:HB3 | 1.86 | 0.56 |
| 49:LG:205:THR:HG22 | 49:LG:206:GLN:H | 1.71 | 0.56 |
| 19:S2:1560:U:O2 | 19:S2:1575:G:O6 | 2.22 | 0.56 |
| 23:SD:132:LYS:HB2 | 23:SD:189:MET:HG2 | 1.88 | 0.56 |
| 40:L5:4419:U:OP1 | 40:L5:4421:C:N4 | 2.39 | 0.56 |
| 40:L5:4740:G:O6 | 40:L5:4959:U:O2 | 2.24 | 0.56 |
| 54:LM:11:ARG:NH1 | 54:LM:58:THR:O | 2.39 | 0.56 |
| 59:LS:83:ARG:HG3 | 59:LS:125:GLN:HB3 | 1.88 | 0.56 |
| 5:SG:140:ARG:NH1 | 19:S2:146:G:OP2 | 2.39 | 0.56 |
| 29:SS:16:LEU:HD13 | 29:SS:100:ALA:HB2 | 1.87 | 0.56 |
| 40:L5:1241:C:H1' | 67:Lb:119:CYS:HA | 1.88 | 0.56 |
| 40:L5:2485:U:H4' | 40:L5:2486:G:N2 | 2.21 | 0.56 |
| 40:L5:4728:U:OP1 | 44:LB:132:LYS:NZ | 2.39 | 0.56 |
| 83:Ls:91:THR:OG1 | 83:Ls:93:GLU:OE1 | 2.24 | 0.56 |
| 1:SA:42:LYS:HZ1 | 1:SA:48:ILE:HD11 | 1.71 | 0.56 |
| 13:SW:54:ASP:HA | 13:SW:59:GLY:HA3 | 1.88 | 0.56 |
| 13:SW:78:ARG:NH1 | 19:S2:863:PSU:O2' | 2.38 | 0.56 |
| 19:S2:969:U:O2 | 19:S2:971:G:N1 | 2.39 | 0.56 |
| 28:SQ:9:SER:HB2 | 28:SQ:26:LYS:HG3 | 1.88 | 0.56 |
| 40:L5:1332:C:H2' | 40:L5:1333:A:C8 | 2.40 | 0.56 |
| 40:L5:2568:C:H2' | 40:L5:2569:G:H8 | 1.70 | 0.56 |
| 46:LD:60:ILE:HG13 | 46:LD:93:THR:HA | 1.88 | 0.56 |
| 5:SG:135:PRO:HG2 | 5:SG:141:ILE:HG22 | 1.89 | 0.55 |
| 14:SX:67:ARG:NH2 | 14:SX:114:ASP:OD2 | 2.39 | 0.55 |
| 23:SD:193:ASP:OD1 | 23:SD:196:GLY:N | 2.36 | 0.55 |
| 40:L5:1866:U:OP1 | 51:LI:4:ARG:NH1 | 2.31 | 0.55 |
| 40:L5:4088:C:H2' | 40:L5:4089:G:C8 | 2.41 | 0.55 |
| 58:LQ:15:ARG:NH1 | 58:LQ:52:PHE:O | 2.38 | 0.55 |
| 59:LS:127:MET:HA | 60:LT:153:PRO:HG2 | 1.88 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 63:LX:64:SER:HB2 | 73:Lh:69:LEU:HD13 | 1.87 | 0.55 |
| 11:SO:19:PRO:HG2 | 11:SO:21:VAL:HG13 | 1.89 | 0.55 |
| 16:Sa:44:ILE:HG23 | 16:Sa:45:VAL:HG13 | 1.88 | 0.55 |
| 19:S2:925:G:N2 | 19:S2:1017:U:O2 | 2.29 | 0.55 |
| 24:SF:59:LYS:HB3 | 24:SF:62:ARG:HD3 | 1.88 | 0.55 |
| 40:L5:188:G:N2 | 40:L5:190:G:O6 | 2.40 | 0.55 |
| 40:L5:714:G:H2' | 40:L5:715:G:H8 | 1.71 | 0.55 |
| 40:L5:736:C:OP1 | 54:LM:74:ARG:NH2 | 2.30 | 0.55 |
| 40:L5:1511:U:H2' | 40:L5:1512:G:H8 | 1.70 | 0.55 |
| 40:L5:1872:G:O2' | 40:L5:4219:A:N3 | 2.34 | 0.55 |
| 40:L5:1970:A:N6 | 40:L5:2015:U:OP2 | 2.39 | 0.55 |
| 40:L5:4566:U:O2' | 44:LB:234:ARG:NH1 | 2.39 | 0.55 |
| 19:S2:1778:C:H3' | 19:S2:1779:G:H8 | 1.72 | 0.55 |
| 37:At:43:A:H2' | 37:At:44:A:H8 | 1.72 | 0.55 |
| 40:L5:729:G:H5" | 48:LF:76:ARG:HD2 | 1.88 | 0.55 |
| 40:L5:1689:G:OP1 | 58:LQ:11:ARG:NH2 | 2.40 | 0.55 |
| 40:L5:2021:G:OP1 | 83:Ls:58:ASN:N | 2.40 | 0.55 |
| 40:L5:2375:A:H2' | 40:L5:2376:A:H8 | 1.71 | 0.55 |
| 76:Lk:14:THR:HA | 76:Lk:17:ARG:HD3 | 1.88 | 0.55 |
| 84:Lt:16:ARG:HE | 84:Lt:17:CYS:N | 2.03 | 0.55 |
| 6:SH:143:ARG:HB2 | 6:SH:155:LYS:HB2 | 1.88 | 0.55 |
| 19:S2:146:G:H2' | 19:S2:147:A:C8 | 2.42 | 0.55 |
| 19:S2:300:U:H2' | 19:S2:301:A:C8 | 2.41 | 0.55 |
| 19:S2:1845:A:H2' | 19:S2:1846:G:H8 | 1.71 | 0.55 |
| 21:LW:72:THR:OG1 | 21:LW:74:ARG:NH2 | 2.39 | 0.55 |
| 40:L5:169:G:N2 | 40:L5:171:U:O4 | 2.39 | 0.55 |
| 5:SG:162:LEU:O | 5:SG:167:LYS:NZ | 2.39 | 0.55 |
| 19:S2:1226:G:H21 | 19:S2:1640:A:N6 | 2.03 | 0.55 |
| 19:S2:1588:A:H2' | 19:S2:1589:A:H8 | 1.72 | 0.55 |
| 24:SF:49:LEU:HD23 | 28:SQ:50:LYS:HG2 | 1.88 | 0.55 |
| 29:SS:121:ARG:HG3 | 29:SS:131:VAL:HB | 1.87 | 0.55 |
| 40:L5:1613:A:H5" | 43:LA:183:GLY:HA3 | 1.89 | 0.55 |
| 40:L5:2609:G:H2' | 40:L5:2610:G:H8 | 1.71 | 0.55 |
| 40:L5:4454:G:H1 | 40:L5:4526:U:H3 | 1.54 | 0.55 |
| 45:LC:298:ILE:HD13 | 58:LQ:131:PRO:HB3 | 1.88 | 0.55 |
| 46:LD:265:ARG:NH1 | 46:LD:267:ASN:O | 2.38 | 0.55 |
| 51:LI:10:ARG:NH2 | 51:LI:56:GLU:OE1 | 2.39 | 0.55 |
| 1:SA:76:VAL:HG12 | 1:SA:123:VAL:HB | 1.88 | 0.55 |
| 2:SB:136:ARG:NH2 | 19:S2:941:C:OP1 | 2.40 | 0.55 |
| 8:SJ:136:ARG:N | 8:SJ:158:ASP:O | 2.39 | 0.55 |
| 20:LR:84:THR:HG22 | 20:LR:86:ASN:H | 1.71 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 27:SP:130:ARG:HD3 | 27:SP:131:PRO:HD2 | 1.88 | 0.55 |
| 40:L5:293:G:OP1 | 87:L5:5263:SPM:N1 | 2.37 | 0.55 |
| 40:L5:4088:C:OP1 | 43:LA:37:ARG:NH1 | 2.39 | 0.55 |
| 40:L5:4472:G:O2' | 78:Lm:100:TYR:O | 2.24 | 0.55 |
| 19:S2:1402:A:N6 | 19:S2:1441:U:O2' | 2.40 | 0.55 |
| 23:SD:158:ILE:HG23 | 23:SD:189:MET:HE1 | 1.89 | 0.55 |
| 40:L5:135:G:H22 | 73:Lh:94:ARG:HD2 | 1.71 | 0.55 |
| 40:L5:450:G:O6 | 40:L5:1297:U:O4 | 2.24 | 0.55 |
| 40:L5:2049:G:HO2' | 40:L5:3884:PSU:HO2' | 1.52 | 0.55 |
| 40:L5:4239:A:H2' | 40:L5:4240:G:H8 | 1.71 | 0.55 |
| 40:L5:4693:C:OP1 | 50:LH:64:ARG:NH1 | 2.35 | 0.55 |
| 40:L5:4910:G:H4' | 44:LB:95:THR:HG22 | 1.87 | 0.55 |
| 40:L5:5055:G:H2' | 40:L5:5056:A:H8 | 1.71 | 0.55 |
| 52:LJ:29:SER:OG | 52:LJ:67:LYS:O | 2.19 | 0.55 |
| 83:Ls:103:LEU:HA | 83:Ls:106:LYS:HD3 | 1.89 | 0.55 |
| 4:SE:125:LYS:O | 4:SE:142:HIS:N | 2.40 | 0.55 |
| 6:SH:160:LYS:HD3 | 6:SH:189:PHE:HB3 | 1.88 | 0.55 |
| 19:S2:1144:A:H2' | 19:S2:1145:A:C8 | 2.41 | 0.55 |
| 19:S2:1692:U:H2' | 19:S2:1693:G:C8 | 2.42 | 0.55 |
| 35:Sf:103:LEU:HB2 | 35:Sf:105:TYR:CE2 | 2.41 | 0.55 |
| 40:L5:318:A:H2' | 40:L5:319:A:H8 | 1.71 | 0.55 |
| 40:L5:2440:U:H1' | 40:L5:2518:G:H2' | 1.88 | 0.55 |
| 40:L5:2784:C:H2' | 40:L5:2785:C:H6 | 1.72 | 0.55 |
| 40:L5:4742:G:H2' | 40:L5:4743:G:H8 | 1.71 | 0.55 |
| 45:LC:33:ARG:HD3 | 45:LC:36:ILE:HD12 | 1.89 | 0.55 |
| 71:Lf:77:ALA:HA | 71:Lf:84:VAL:HA | 1.89 | 0.55 |
| 3:SC:70:VAL:HG11 | 3:SC:93:ILE:HG23 | 1.89 | 0.55 |
| 19:S2:223:C:H2' | 19:S2:224:A:C8 | 2.42 | 0.55 |
| 19:S2:432:G:H2' | 19:S2:433:A:C8 | 2.42 | 0.55 |
| 24:SF:49:LEU:HD12 | 24:SF:50:PRO:HD2 | 1.89 | 0.55 |
| 30:ST:108:GLU:OE2 | 30:ST:121:ARG:NH1 | 2.40 | 0.55 |
| 40:L5:280:G:OP2 | 55:LN:44:ARG:NH1 | 2.37 | 0.55 |
| 40:L5:2092:G:O2' | 40:L5:2262:G:N2 | 2.40 | 0.55 |
| 40:L5:2458:C:O2' | 40:L5:3671:G:N3 | 2.38 | 0.55 |
| 40:L5:2554:U:O2 | 40:L5:2764:A:N7 | 2.40 | 0.55 |
| 46:LD:62:CYS:HB3 | 46:LD:105:LEU:HD22 | 1.89 | 0.55 |
| 46:LD:150:LEU:HD12 | 52:LJ:146:ARG:HG3 | 1.89 | 0.55 |
| 16:Sa:70:LYS:HD3 | 19:S2:987:A:H4' | 1.89 | 0.55 |
| 19:S2:1588:A:H2' | 19:S2:1589:A:C8 | 2.42 | 0.55 |
| 40:L5:67:C:OP2 | 40:L5:312:G:N2 | 2.39 | 0.55 |
| 40:L5:1086:C:H2' | 40:L5:1087:A:H8 | 1.71 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1178:G:H5” | 40:L5:1180:C:H41 | 1.72 | 0.55 |
| 40:L5:1591:U:OP2 | 40:L5:2856:C:O2’ | 2.25 | 0.55 |
| 40:L5:2041:A:N7 | 40:L5:4434:C:O2’ | 2.39 | 0.55 |
| 43:LA:7:GLY:HA2 | 43:LA:10:LYS:HG3 | 1.89 | 0.55 |
| 43:LA:107:MET:HE1 | 43:LA:164:ALA:HB3 | 1.87 | 0.55 |
| 47:LE:192:LYS:O | 71:Lf:108:SER:OG | 2.25 | 0.55 |
| 52:LJ:112:HIS:ND1 | 52:LJ:126:TYR:O | 2.27 | 0.55 |
| 84:Lt:65:GLN:NE2 | 84:Lt:69:ALA:O | 2.40 | 0.55 |
| 26:SM:36:ARG:NH2 | 35:Sf:129:GLY:O | 2.40 | 0.54 |
| 40:L5:1939:A:H5’ | 40:L5:1940:G:H4’ | 1.89 | 0.54 |
| 40:L5:2577:C:OP1 | 65:LZ:111:ARG:NH2 | 2.40 | 0.54 |
| 40:L5:2749:C:H2’ | 40:L5:2750:G:C8 | 2.41 | 0.54 |
| 40:L5:4301:U:OP2 | 40:L5:4303:C:N4 | 2.40 | 0.54 |
| 40:L5:4667:C:OP1 | 44:LB:224:LYS:NZ | 2.37 | 0.54 |
| 40:L5:4764:A:N6 | 50:LH:60:TRP:O | 2.38 | 0.54 |
| 52:LJ:95:ARG:HG3 | 52:LJ:175:LEU:HB2 | 1.90 | 0.54 |
| 65:LZ:12:LEU:HB2 | 65:LZ:81:MET:HB3 | 1.88 | 0.54 |
| 19:S2:1059:G:N2 | 19:S2:1829:G:O3’ | 2.40 | 0.54 |
| 19:S2:1614:A:OP1 | 27:SP:42:ARG:NH2 | 2.40 | 0.54 |
| 19:S2:1623:A:N1 | 29:SS:132:ARG:NH1 | 2.56 | 0.54 |
| 19:S2:1628:C:OP1 | 30:ST:38:LYS:NZ | 2.39 | 0.54 |
| 40:L5:52:G:OP1 | 75:Lj:48:ASN:N | 2.36 | 0.54 |
| 40:L5:126:C:H2’ | 40:L5:127:G:H8 | 1.72 | 0.54 |
| 40:L5:1732:C:H2’ | 40:L5:1733:G:C8 | 2.41 | 0.54 |
| 40:L5:1751:A:H2’ | 40:L5:1752:G:H8 | 1.72 | 0.54 |
| 16:Sa:45:VAL:HG22 | 16:Sa:64:LEU:HD21 | 1.89 | 0.54 |
| 19:S2:1217:A:H2’ | 19:S2:1218:C:C6 | 2.42 | 0.54 |
| 40:L5:1077:C:OP1 | 40:L5:1215:C:O2’ | 2.22 | 0.54 |
| 40:L5:1351:G:O6 | 58:LQ:55:ARG:NH1 | 2.40 | 0.54 |
| 40:L5:1985:G:N2 | 40:L5:2004:U:O4 | 2.41 | 0.54 |
| 40:L5:3661:G:N2 | 40:L5:3681:G:O2’ | 2.40 | 0.54 |
| 40:L5:3870:C:H2’ | 40:L5:3871:A:H8 | 1.72 | 0.54 |
| 40:L5:4586:G:OP1 | 56:LO:72:HIS:N | 2.33 | 0.54 |
| 1:SA:184:ARG:HB3 | 1:SA:191:ARG:HE | 1.73 | 0.54 |
| 5:SG:135:PRO:HA | 19:S2:169:U:H5” | 1.90 | 0.54 |
| 9:SL:71:ARG:NE | 19:S2:352:U:O2 | 2.31 | 0.54 |
| 15:SY:55:ILE:HD12 | 15:SY:75:ILE:HG22 | 1.88 | 0.54 |
| 19:S2:609:U:H2’ | 19:S2:610:G:H8 | 1.72 | 0.54 |
| 19:S2:1438:A:H2’ | 19:S2:1439:A:H8 | 1.72 | 0.54 |
| 29:SS:86:ARG:HH21 | 29:SS:106:LYS:HB3 | 1.72 | 0.54 |
| 32:SZ:99:LEU:HD11 | 32:SZ:102:LYS:HB2 | 1.89 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 38:Pt:38:C:H2' | 38:Pt:39:G:H8 | 1.72 | 0.54 |
| 40:L5:2258:C:N4 | 47:LE:88:VAL:O | 2.35 | 0.54 |
| 40:L5:4188:U:H2' | 40:L5:4189:U:C6 | 2.42 | 0.54 |
| 40:L5:4571:A2M:H2' | 40:L5:4572:U:C6 | 2.43 | 0.54 |
| 40:L5:4594:U:H2' | 40:L5:4595:G:H8 | 1.73 | 0.54 |
| 62:LV:13:LYS:HD3 | 62:LV:128:LEU:HD22 | 1.88 | 0.54 |
| 9:SL:111:VAL:HG12 | 9:SL:140:PHE:HB2 | 1.89 | 0.54 |
| 19:S2:49:C:H2' | 19:S2:472:C:H41 | 1.72 | 0.54 |
| 19:S2:432:G:H2' | 19:S2:433:A:H8 | 1.73 | 0.54 |
| 19:S2:1620:A:OP1 | 27:SP:115:TYR:OH | 2.22 | 0.54 |
| 40:L5:348:G:OP2 | 45:LC:198:ASN:ND2 | 2.39 | 0.54 |
| 40:L5:423:G:OP1 | 57:LP:62:ARG:NH1 | 2.40 | 0.54 |
| 40:L5:1346:C:H2' | 40:L5:1347:G:C8 | 2.41 | 0.54 |
| 40:L5:1577:G:O2' | 40:L5:1612:G:H4' | 2.07 | 0.54 |
| 40:L5:1942:A:H2' | 40:L5:1943:A:C8 | 2.42 | 0.54 |
| 40:L5:2017:A:HO2' | 40:L5:2018:C:P | 2.30 | 0.54 |
| 47:LE:277:LEU:HB2 | 71:Lf:4:ARG:HB3 | 1.90 | 0.54 |
| 51:LI:171:TRP:HB2 | 51:LI:178:ALA:HA | 1.90 | 0.54 |
| 1:SA:77:ILE:HD11 | 1:SA:124:VAL:HG22 | 1.90 | 0.54 |
| 19:S2:690:G:OP2 | 19:S2:690:G:N2 | 2.34 | 0.54 |
| 19:S2:866:PSU:H2' | 19:S2:867:OMG:H8 | 1.72 | 0.54 |
| 19:S2:1435:C:H42 | 31:SU:49:LYS:HZ1 | 1.55 | 0.54 |
| 40:L5:748:G:O6 | 59:LS:98:ARG:NH2 | 2.36 | 0.54 |
| 40:L5:2079:G:H2' | 40:L5:2080:U:C6 | 2.43 | 0.54 |
| 84:Lt:57:ARG:HH11 | 84:Lt:84:ALA:HA | 1.71 | 0.54 |
| 2:SB:88:THR:HA | 2:SB:98:THR:HA | 1.88 | 0.54 |
| 9:SL:81:LYS:HG3 | 19:S2:394:G:H5' | 1.90 | 0.54 |
| 9:SL:120:VAL:HG22 | 9:SL:145:VAL:HG11 | 1.88 | 0.54 |
| 19:S2:525:A:H2' | 19:S2:526:A:H8 | 1.72 | 0.54 |
| 19:S2:960:U:O2' | 19:S2:962:A:N7 | 2.35 | 0.54 |
| 40:L5:276:C:H3' | 74:Li:29:ARG:HH12 | 1.73 | 0.54 |
| 40:L5:1175:A:OP1 | 46:LD:268:ARG:NH1 | 2.40 | 0.54 |
| 40:L5:1857:C:H2' | 40:L5:1858:A:H8 | 1.71 | 0.54 |
| 40:L5:3846:C:H2' | 40:L5:3847:C:H6 | 1.71 | 0.54 |
| 40:L5:3916:G:H2' | 40:L5:3917:A:C8 | 2.43 | 0.54 |
| 62:LV:85:ARG:NH1 | 62:LV:99:GLU:O | 2.41 | 0.54 |
| 40:L5:114:G:N2 | 40:L5:276:C:O2' | 2.41 | 0.54 |
| 40:L5:444:G:H2' | 40:L5:445:U:H6 | 1.72 | 0.54 |
| 40:L5:1478:C:H2' | 40:L5:1479:G:H8 | 1.73 | 0.54 |
| 40:L5:4448:G:H5" | 40:L5:4449:A:H5' | 1.90 | 0.54 |
| 45:LC:107:THR:O | 45:LC:111:TRP:NE1 | 2.37 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:SG:164:LYS:HB2 | 5:SG:167:LYS:HG2 | 1.89 | 0.54 |
| 19:S2:454:U:H2' | 19:S2:455:A:C8 | 2.43 | 0.54 |
| 19:S2:1360:U:O2' | 19:S2:1379:A:OP2 | 2.24 | 0.54 |
| 24:SF:20:PHE:O | 24:SF:22:LYS:NZ | 2.36 | 0.54 |
| 36:Sg:32:LEU:HA | 36:Sg:42:MET:HA | 1.90 | 0.54 |
| 38:Pt:51:C:H2' | 38:Pt:52:G:H8 | 1.73 | 0.54 |
| 40:L5:909:A:H2' | 40:L5:910:G:H8 | 1.73 | 0.54 |
| 40:L5:2777:G:H5" | 40:L5:2778:G:H5' | 1.89 | 0.54 |
| 42:L8:94:G:H21 | 75:Lj:82:THR:HB | 1.73 | 0.54 |
| 43:LA:79:ALA:HA | 43:LA:169:VAL:HA | 1.89 | 0.54 |
| 9:SL:16:ILE:HD11 | 9:SL:36:TYR:H | 1.73 | 0.54 |
| 9:SL:40:ILE:O | 19:S2:291:G:N2 | 2.40 | 0.54 |
| 28:SQ:42:ILE:HG23 | 28:SQ:44:PRO:HD2 | 1.90 | 0.54 |
| 40:L5:38:A:H61 | 40:L5:41:C:H3' | 1.73 | 0.54 |
| 40:L5:217:C:H5 | 40:L5:219:G:H4' | 1.72 | 0.54 |
| 40:L5:2624:G:OP2 | 61:LU:97:ARG:NH2 | 2.41 | 0.54 |
| 5:SG:142:ARG:HA | 5:SG:147:LEU:HD23 | 1.90 | 0.53 |
| 7:SI:43:ILE:HG12 | 7:SI:57:ALA:HA | 1.89 | 0.53 |
| 14:SX:17:ARG:NH1 | 19:S2:658:U:O2 | 2.41 | 0.53 |
| 14:SX:67:ARG:NH1 | 19:S2:617:G:N7 | 2.56 | 0.53 |
| 40:L5:679:C:H2' | 40:L5:680:G:C8 | 2.41 | 0.53 |
| 40:L5:977:C:OP1 | 45:LC:333:LYS:NZ | 2.41 | 0.53 |
| 40:L5:2090:U:OP1 | 40:L5:2266:C:N4 | 2.40 | 0.53 |
| 40:L5:3598:C:H2' | 40:L5:3599:A:H8 | 1.73 | 0.53 |
| 40:L5:4127:A:H61 | 40:L5:4156:G:H2' | 1.72 | 0.53 |
| 52:LJ:99:PHE:HA | 52:LJ:105:PHE:HB3 | 1.90 | 0.53 |
| 54:LM:15:VAL:HG22 | 54:LM:50:MET:HE1 | 1.90 | 0.53 |
| 56:LO:54:TYR:OH | 56:LO:73:PHE:O | 2.26 | 0.53 |
| 19:S2:26:U:H2' | 19:S2:27:A2M:H8 | 1.90 | 0.53 |
| 19:S2:342:C:H2' | 19:S2:343:A:H8 | 1.73 | 0.53 |
| 19:S2:1438:A:H2' | 19:S2:1439:A:C8 | 2.42 | 0.53 |
| 23:SD:8:LYS:HG2 | 31:SU:61:LEU:HD11 | 1.90 | 0.53 |
| 24:SF:32:ASP:OD2 | 24:SF:34:SER:OG | 2.25 | 0.53 |
| 37:At:29:C:H2' | 37:At:30:G:H8 | 1.73 | 0.53 |
| 40:L5:733:A:N6 | 40:L5:933:G:O6 | 2.41 | 0.53 |
| 40:L5:1333:A:H2' | 40:L5:1334:A:H8 | 1.73 | 0.53 |
| 40:L5:3725:G:N7 | 74:Li:67:LYS:NZ | 2.49 | 0.53 |
| 40:L5:4080:C:H2' | 40:L5:4081:G:H8 | 1.74 | 0.53 |
| 7:SI:64:ASN:HA | 7:SI:75:LYS:HA | 1.90 | 0.53 |
| 14:SX:67:ARG:HG3 | 14:SX:115:ILE:HG12 | 1.91 | 0.53 |
| 18:Se:26:LYS:NZ | 19:S2:525:A:OP2 | 2.41 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1562:C:H2' | 19:S2:1563:G:H8 | 1.73 | 0.53 |
| 19:S2:1845:A:H2' | 19:S2:1846:G:C8 | 2.44 | 0.53 |
| 40:L5:1655:C:O2 | 40:L5:4390:A:O2' | 2.26 | 0.53 |
| 43:LA:51:ASP:HB2 | 43:LA:58:LEU:HG | 1.90 | 0.53 |
| 8:SJ:160:SER:O | 8:SJ:163:SER:OG | 2.27 | 0.53 |
| 28:SQ:5:GLY:O | 28:SQ:27:ARG:NH2 | 2.41 | 0.53 |
| 37:At:18:G:O6 | 37:At:55:U:C2 | 2.62 | 0.53 |
| 40:L5:1175:A:H2 | 40:L5:1185:G:H22 | 1.57 | 0.53 |
| 40:L5:2362:U:H2' | 40:L5:2363:A2M:H8 | 1.90 | 0.53 |
| 40:L5:2491:C:H2' | 40:L5:2492:C:C6 | 2.43 | 0.53 |
| 40:L5:2778:G:N2 | 42:L8:113:C:OP2 | 2.41 | 0.53 |
| 40:L5:2843:U:O2' | 40:L5:4632:U:OP1 | 2.26 | 0.53 |
| 40:L5:4274:A:H2' | 40:L5:4275:G:H8 | 1.73 | 0.53 |
| 47:LE:164:PHE:HA | 47:LE:175:VAL:HG12 | 1.90 | 0.53 |
| 83:Ls:59:THR:HA | 83:Ls:62:ARG:HE | 1.73 | 0.53 |
| 9:SL:133:PRO:HG2 | 19:S2:383:G:H21 | 1.72 | 0.53 |
| 13:SW:6:VAL:HG13 | 13:SW:29:PRO:HB2 | 1.91 | 0.53 |
| 18:Se:58:ASN:HB3 | 19:S2:608:C:H5' | 1.90 | 0.53 |
| 19:S2:28:U:H2' | 19:S2:29:G:H8 | 1.73 | 0.53 |
| 19:S2:90:G:OP1 | 19:S2:445:A:N6 | 2.36 | 0.53 |
| 19:S2:1453:C:OP1 | 22:SR:48:ASN:ND2 | 2.34 | 0.53 |
| 19:S2:1651:A:O2' | 24:SF:83:ASN:OD1 | 2.27 | 0.53 |
| 40:L5:408:A:O2' | 40:L5:411:G:OP2 | 2.22 | 0.53 |
| 40:L5:441:G:H2' | 40:L5:442:G:H8 | 1.74 | 0.53 |
| 40:L5:1686:C:OP1 | 67:Lb:19:ASN:ND2 | 2.36 | 0.53 |
| 40:L5:2835:A:O2' | 44:LB:228:TYR:O | 2.27 | 0.53 |
| 40:L5:3661:G:H4' | 40:L5:3662:A:H5' | 1.90 | 0.53 |
| 40:L5:4185:G:OP1 | 43:LA:2:GLY:N | 2.41 | 0.53 |
| 1:SA:207:PRO:HA | 1:SA:210:ILE:HG22 | 1.90 | 0.53 |
| 19:S2:1441:U:O2 | 19:S2:1443:C:N4 | 2.39 | 0.53 |
| 21:LW:9:SER:HA | 21:LW:52:THR:HG23 | 1.91 | 0.53 |
| 31:SU:80:PHE:HB3 | 34:Sd:52:PHE:HB3 | 1.89 | 0.53 |
| 38:Pt:51:C:H2' | 38:Pt:52:G:C8 | 2.43 | 0.53 |
| 40:L5:209:U:H5 | 40:L5:233:U:C4 | 2.27 | 0.53 |
| 40:L5:655:C:H2' | 40:L5:656:C:C6 | 2.44 | 0.53 |
| 40:L5:3717:A:H2' | 40:L5:3718:A2M:H8 | 1.90 | 0.53 |
| 40:L5:4301:U:OP1 | 60:LT:78:LYS:NZ | 2.42 | 0.53 |
| 65:LZ:99:ASP:HB2 | 65:LZ:102:ARG:HH21 | 1.72 | 0.53 |
| 1:SA:84:GLN:HG2 | 1:SA:100:ALA:HB1 | 1.91 | 0.53 |
| 4:SE:146:THR:HG21 | 19:S2:122:G:H21 | 1.74 | 0.53 |
| 5:SG:148:SER:OG | 5:SG:151:ASP:OD2 | 2.27 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:SH:65:PRO:HG2 | 6:SH:68:GLN:HB2 | 1.89 | 0.53 |
| 14:SX:107:ARG:HG3 | 14:SX:110:HIS:HB3 | 1.91 | 0.53 |
| 40:L5:10:A:H2' | 40:L5:11:G:H8 | 1.74 | 0.53 |
| 40:L5:676:C:H2' | 40:L5:677:G:H8 | 1.74 | 0.53 |
| 40:L5:1241:C:O2' | 67:Lb:120:ARG:O | 2.21 | 0.53 |
| 40:L5:2756:G:O6 | 65:LZ:51:ARG:NH2 | 2.38 | 0.53 |
| 40:L5:4076:G:OP2 | 40:L5:4163:U:N3 | 2.38 | 0.53 |
| 41:L7:57:C:H2' | 41:L7:58:A:H8 | 1.72 | 0.53 |
| 49:LG:46:GLN:OE1 | 49:LG:49:ARG:NH1 | 2.42 | 0.53 |
| 82:Lr:28:GLU:HG2 | 82:Lr:31:ASN:HB2 | 1.90 | 0.53 |
| 4:SE:247:THR:N | 4:SE:250:GLU:OE2 | 2.42 | 0.53 |
| 5:SG:4:ASN:ND2 | 5:SG:110:ASN:OD1 | 2.36 | 0.53 |
| 19:S2:159:A2M:O5' | 19:S2:159:A2M:H8 | 2.09 | 0.53 |
| 40:L5:951:G:H2' | 40:L5:952:G:H8 | 1.74 | 0.53 |
| 40:L5:2654:C:H2' | 40:L5:2655:C:H6 | 1.72 | 0.53 |
| 40:L5:4108:G:H2' | 40:L5:4109:G:C8 | 2.44 | 0.53 |
| 41:L7:38:U:N3 | 41:L7:41:G:OP2 | 2.41 | 0.53 |
| 55:LN:157:LYS:O | 55:LN:162:ARG:NH1 | 2.42 | 0.53 |
| 12:SV:15:ARG:NH1 | 12:SV:33:GLN:OE1 | 2.42 | 0.53 |
| 19:S2:1018:U:H2' | 19:S2:1019:C:H6 | 1.74 | 0.53 |
| 19:S2:1284:A:HO2' | 26:SM:106:CYS:HG | 1.56 | 0.53 |
| 40:L5:210:C:HO2' | 40:L5:234:G:HO2' | 1.56 | 0.53 |
| 40:L5:1942:A:N3 | 40:L5:4432:C:O2' | 2.41 | 0.53 |
| 40:L5:2568:C:H2' | 40:L5:2569:G:C8 | 2.43 | 0.53 |
| 40:L5:4522:G:O2' | 40:L5:4525:C:OP2 | 2.26 | 0.53 |
| 49:LG:48:LYS:HD2 | 63:LX:42:THR:HB | 1.91 | 0.53 |
| 56:LO:6:VAL:HG22 | 56:LO:32:LYS:HB2 | 1.91 | 0.53 |
| 58:LQ:80:ALA:HB3 | 58:LQ:100:VAL:HG22 | 1.91 | 0.53 |
| 5:SG:223:LYS:O | 5:SG:227:GLN:NE2 | 2.42 | 0.53 |
| 14:SX:28:LYS:HD2 | 14:SX:32:LEU:HD22 | 1.91 | 0.53 |
| 19:S2:349:A:H2' | 19:S2:350:C:C6 | 2.44 | 0.53 |
| 19:S2:1598:G:N7 | 32:SZ:85:ARG:NH2 | 2.57 | 0.53 |
| 28:SQ:72:VAL:HG11 | 28:SQ:80:GLN:HG3 | 1.89 | 0.53 |
| 37:At:6:C:H2' | 37:At:7:G:C8 | 2.44 | 0.53 |
| 40:L5:184:U:O2' | 40:L5:253:G:N2 | 2.38 | 0.53 |
| 40:L5:4459:U:H2' | 40:L5:4460:U:C6 | 2.44 | 0.53 |
| 40:L5:4586:G:O6 | 40:L5:4717:A:N6 | 2.41 | 0.53 |
| 40:L5:4992:G:H2' | 40:L5:4993:G:H8 | 1.74 | 0.53 |
| 42:L8:38:U:H5' | 73:Lh:81:LEU:HD13 | 1.90 | 0.53 |
| 42:L8:142:U:OP1 | 55:LN:38:ARG:NH2 | 2.42 | 0.53 |
| 56:LO:46:ASN:HB3 | 56:LO:134:LYS:HD3 | 1.91 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 61:LU:55:ASN:OD1 | 61:LU:58:GLY:N | 2.38 | 0.53 |
| 5:SG:133:LEU:O | 19:S2:168:C:O2' | 2.27 | 0.52 |
| 19:S2:500:A:O2' | 19:S2:501:C:O4' | 2.25 | 0.52 |
| 19:S2:874:G:H2' | 19:S2:875:A:C8 | 2.44 | 0.52 |
| 19:S2:1405:A:H2' | 19:S2:1406:G:O4' | 2.08 | 0.52 |
| 19:S2:1417:C:N3 | 19:S2:1422:G:N1 | 2.48 | 0.52 |
| 40:L5:432:U:OP2 | 40:L5:3888:G:N2 | 2.40 | 0.52 |
| 40:L5:1824:G:H2' | 40:L5:1825:A:C8 | 2.44 | 0.52 |
| 40:L5:1996:C:N4 | 40:L5:2000:G:H22 | 2.06 | 0.52 |
| 40:L5:4097:G:O6 | 40:L5:4098:A:N6 | 2.42 | 0.52 |
| 40:L5:4238:G:H2' | 40:L5:4239:A:C8 | 2.44 | 0.52 |
| 50:LH:92:MET:HE2 | 50:LH:179:ILE:HG22 | 1.91 | 0.52 |
| 8:SJ:132:GLN:NE2 | 19:S2:561:A:N3 | 2.57 | 0.52 |
| 19:S2:1417:C:N4 | 19:S2:1422:G:H22 | 1.97 | 0.52 |
| 36:Sg:207:CYS:HB3 | 36:Sg:221:LEU:HD21 | 1.91 | 0.52 |
| 40:L5:67:C:N4 | 40:L5:325:U:O2' | 2.40 | 0.52 |
| 40:L5:1962:A:H5' | 40:L5:1963:C:H5 | 1.74 | 0.52 |
| 40:L5:2260:C:OP1 | 47:LE:108:LYS:NZ | 2.37 | 0.52 |
| 40:L5:2609:G:H2' | 40:L5:2610:G:C8 | 2.45 | 0.52 |
| 40:L5:2809:G:O2' | 40:L5:4644:G:OP1 | 2.26 | 0.52 |
| 40:L5:4485:C:O2' | 78:Lm:114:LYS:NZ | 2.39 | 0.52 |
| 40:L5:4587:G:OP1 | 56:LO:61:ARG:NH1 | 2.35 | 0.52 |
| 45:LC:55:SER:HB3 | 45:LC:58:ALA:HB2 | 1.90 | 0.52 |
| 19:S2:17:C:H2' | 19:S2:18:C:C6 | 2.45 | 0.52 |
| 41:L7:119:U:C2 | 46:LD:261:VAL:HG21 | 2.44 | 0.52 |
| 1:SA:37:TYR:OH | 1:SA:57:LYS:NZ | 2.29 | 0.52 |
| 1:SA:145:ILE:HG13 | 1:SA:159:ILE:HD13 | 1.91 | 0.52 |
| 4:SE:36:HIS:NE2 | 4:SE:143:ASP:OD1 | 2.43 | 0.52 |
| 19:S2:158:A:C2 | 19:S2:463:C:H1' | 2.45 | 0.52 |
| 19:S2:1240:A:N6 | 27:SP:122:THR:O | 2.42 | 0.52 |
| 19:S2:1681:U:O2' | 33:Sc:23:SER:O | 2.27 | 0.52 |
| 23:SD:136:VAL:HG12 | 23:SD:186:VAL:HG22 | 1.91 | 0.52 |
| 23:SD:218:LEU:HD11 | 36:Sg:189:ILE:HB | 1.91 | 0.52 |
| 38:Pt:56:C:C2 | 80:Lo:104:ILE:HG21 | 2.44 | 0.52 |
| 40:L5:135:G:N7 | 73:Lh:97:LYS:HG2 | 2.25 | 0.52 |
| 40:L5:264:C:H2' | 40:L5:265:C:C4 | 2.44 | 0.52 |
| 40:L5:696:C:H5' | 40:L5:697:G:H5' | 1.90 | 0.52 |
| 49:LG:103:ARG:NH2 | 49:LG:192:ARG:O | 2.43 | 0.52 |
| 50:LH:24:THR:HA | 50:LH:37:ASP:HA | 1.91 | 0.52 |
| 52:LJ:15:LEU:HD12 | 52:LJ:165:TRP:HB2 | 1.91 | 0.52 |
| 73:Lh:88:THR:HB | 73:Lh:91:MET:HB2 | 1.92 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 84:Lt:61:LYS:HA | 84:Lt:75:PRO:HD2 | 1.91 | 0.52 |
| 2:SB:52:THR:HG23 | 2:SB:57:ILE:HA | 1.91 | 0.52 |
| 19:S2:1199:A:H2' | 19:S2:1200:A:C8 | 2.45 | 0.52 |
| 25:SK:3:MET:HE1 | 25:SK:48:ALA:HB2 | 1.91 | 0.52 |
| 25:SK:15:LEU:HD23 | 25:SK:79:LEU:HD11 | 1.90 | 0.52 |
| 40:L5:2279:A:O2' | 70:Le:48:ARG:NH2 | 2.43 | 0.52 |
| 40:L5:2835:A:H2' | 40:L5:2836:A:H8 | 1.75 | 0.52 |
| 40:L5:4758:U:OP2 | 56:LO:171:LYS:NZ | 2.43 | 0.52 |
| 55:LN:120:TRP:HE1 | 55:LN:123:GLU:HB3 | 1.73 | 0.52 |
| 17:Sb:54:VAL:HG23 | 17:Sb:63:LEU:HB2 | 1.92 | 0.52 |
| 19:S2:53:C:O2' | 19:S2:507:G:N7 | 2.34 | 0.52 |
| 19:S2:1748:G:O6 | 19:S2:1786:U:O4 | 2.27 | 0.52 |
| 24:SF:76:MET:O | 24:SF:159:ARG:NH2 | 2.38 | 0.52 |
| 40:L5:2489:C:H4' | 40:L5:2491:C:H42 | 1.74 | 0.52 |
| 43:LA:103:PRO:HA | 43:LA:163:ARG:HA | 1.92 | 0.52 |
| 65:LZ:46:ILE:HA | 65:LZ:70:SER:HA | 1.92 | 0.52 |
| 3:SC:81:ILE:HG21 | 3:SC:88:ILE:HD11 | 1.92 | 0.52 |
| 4:SE:129:ILE:HD13 | 4:SE:139:LEU:HD12 | 1.91 | 0.52 |
| 6:SH:157:HIS:ND1 | 6:SH:188:GLU:OE2 | 2.43 | 0.52 |
| 8:SJ:38:ARG:NH1 | 19:S2:523:A:OP2 | 2.37 | 0.52 |
| 15:SY:54:VAL:HG22 | 15:SY:76:TYR:HB2 | 1.90 | 0.52 |
| 23:SD:137:VAL:HB | 23:SD:185:LYS:HB2 | 1.90 | 0.52 |
| 40:L5:3610:A:H2' | 40:L5:3611:A:H8 | 1.73 | 0.52 |
| 40:L5:5006:U:H4' | 40:L5:5007:A:H5' | 1.92 | 0.52 |
| 48:LF:29:LYS:HZ3 | 48:LF:32:ARG:HH12 | 1.58 | 0.52 |
| 55:LN:164:LEU:O | 55:LN:169:ARG:NH2 | 2.42 | 0.52 |
| 82:Lr:26:SER:OG | 82:Lr:28:GLU:OE1 | 2.23 | 0.52 |
| 83:Ls:18:ILE:HD12 | 83:Ls:21:LEU:HD21 | 1.92 | 0.52 |
| 1:SA:3:GLY:N | 1:SA:56:GLU:OE1 | 2.42 | 0.52 |
| 5:SG:116:LYS:HE3 | 5:SG:125:THR:HG21 | 1.92 | 0.52 |
| 11:SO:147:ARG:NH2 | 19:S2:1855:G:OP2 | 2.43 | 0.52 |
| 12:SV:17:CYS:HB3 | 12:SV:22:ARG:H | 1.75 | 0.52 |
| 26:SM:36:ARG:HD2 | 35:Sf:103:LEU:HD13 | 1.92 | 0.52 |
| 40:L5:3658:C:H2' | 40:L5:3659:G:H8 | 1.75 | 0.52 |
| 57:LP:116:HIS:HD2 | 57:LP:149:ILE:HD12 | 1.74 | 0.52 |
| 66:La:36:GLY:HA3 | 66:La:40:HIS:CE1 | 2.44 | 0.52 |
| 4:SE:73:ASP:OD2 | 4:SE:145:ARG:NH2 | 2.43 | 0.52 |
| 5:SG:87:ARG:NH2 | 19:S2:161:U:O2' | 2.43 | 0.52 |
| 7:SI:101:ILE:HD11 | 7:SI:202:ILE:HD11 | 1.92 | 0.52 |
| 19:S2:1037:G:H4' | 19:S2:1845:A:H4' | 1.92 | 0.52 |
| 19:S2:1179:G:N2 | 19:S2:1182:A:OP2 | 2.40 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:261:G:H2' | 40:L5:262:G:C8 | 2.45 | 0.52 |
| 40:L5:262:G:H2' | 40:L5:263:G:C8 | 2.41 | 0.52 |
| 40:L5:1967:A:N6 | 40:L5:2021:G:O6 | 2.43 | 0.52 |
| 40:L5:1970:A:H1' | 40:L5:2017:A:H61 | 1.74 | 0.52 |
| 40:L5:2521:G:H2' | 40:L5:2522:G:H8 | 1.75 | 0.52 |
| 40:L5:2539:C:H2' | 40:L5:2540:C:C6 | 2.45 | 0.52 |
| 40:L5:2804:OMC:HM22 | 40:L5:2805:C:H5' | 1.91 | 0.52 |
| 46:LD:106:ALA:HB2 | 46:LD:166:ALA:HA | 1.92 | 0.52 |
| 77:Ll:38:ASN:HB3 | 77:Ll:41:ARG:HG2 | 1.92 | 0.52 |
| 6:SH:138:GLU:N | 6:SH:159:ASP:OD2 | 2.34 | 0.52 |
| 16:Sa:26:CYS:HB3 | 16:Sa:77:CYS:SG | 2.49 | 0.52 |
| 19:S2:328:U:O2' | 19:S2:329:G:O5' | 2.26 | 0.52 |
| 25:SK:14:LEU:HD22 | 25:SK:35:LEU:HD13 | 1.92 | 0.52 |
| 33:Sc:13:ARG:HA | 33:Sc:55:VAL:HA | 1.90 | 0.52 |
| 34:Sd:21:CYS:HB3 | 34:Sd:26:ASN:H | 1.75 | 0.52 |
| 36:Sg:107:ASP:HB2 | 36:Sg:125:ARG:HD2 | 1.92 | 0.52 |
| 40:L5:1514:U:H2' | 40:L5:1515:A:C8 | 2.44 | 0.52 |
| 40:L5:1994:C:H2' | 40:L5:1995:G:N7 | 2.25 | 0.52 |
| 40:L5:2335:C:H2' | 40:L5:2336:G:H8 | 1.74 | 0.52 |
| 40:L5:3754:G:O6 | 40:L5:3771:C:N4 | 2.43 | 0.52 |
| 40:L5:4237:C:O3' | 40:L5:4326:G:N2 | 2.43 | 0.52 |
| 44:LB:108:GLU:HG3 | 44:LB:134:CYS:HB2 | 1.90 | 0.52 |
| 68:Lc:38:ILE:HG21 | 68:Lc:63:TYR:HB3 | 1.92 | 0.52 |
| 74:Li:57:ALA:HA | 74:Li:60:LEU:HD12 | 1.91 | 0.52 |
| 2:SB:117:TRP:HB3 | 2:SB:153:THR:HA | 1.92 | 0.51 |
| 5:SG:131:ARG:HB2 | 21:LW:82:ILE:HG22 | 1.92 | 0.51 |
| 19:S2:1277:C:H2' | 19:S2:1278:A:C8 | 2.45 | 0.51 |
| 38:Pt:50:U:H2' | 38:Pt:51:C:C6 | 2.45 | 0.51 |
| 40:L5:231:U:O2 | 64:LY:103:LYS:NZ | 2.30 | 0.51 |
| 40:L5:1177:U:H5" | 46:LD:286:SER:HB2 | 1.91 | 0.51 |
| 40:L5:1352:C:O2' | 40:L5:1356:U:OP1 | 2.28 | 0.51 |
| 40:L5:1449:C:OP1 | 58:LQ:132:LYS:NZ | 2.40 | 0.51 |
| 40:L5:2749:C:H2' | 40:L5:2750:G:H8 | 1.73 | 0.51 |
| 40:L5:4407:G:H1 | 40:L5:4435:U:H3 | 1.56 | 0.51 |
| 40:L5:4441:A:H5" | 51:LI:114:GLY:HA2 | 1.91 | 0.51 |
| 40:L5:4967:A:H2' | 40:L5:4968:A:H8 | 1.75 | 0.51 |
| 83:Ls:143:ILE:HG13 | 83:Ls:158:VAL:HG21 | 1.92 | 0.51 |
| 11:SO:33:ILE:HG22 | 11:SO:42:VAL:HA | 1.92 | 0.51 |
| 19:S2:149:A:N7 | 19:S2:169:U:O2 | 2.44 | 0.51 |
| 19:S2:1348:G:H2' | 19:S2:1349:G:H8 | 1.76 | 0.51 |
| 31:SU:27:ARG:HD3 | 31:SU:82:MET:HE3 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:162:A:H2' | 40:L5:163:A:H8 | 1.74 | 0.51 |
| 40:L5:2815:A2M:HM'2 | 40:L5:2816:G:H5' | 1.92 | 0.51 |
| 69:Ld:22:THR:HG23 | 69:Ld:122:VAL:HG13 | 1.92 | 0.51 |
| 84:Lt:10:ILE:HG21 | 84:Lt:65:GLN:HB3 | 1.91 | 0.51 |
| 3:SC:210:PRO:HB3 | 3:SC:240:THR:HG21 | 1.91 | 0.51 |
| 19:S2:1259:A:H8 | 19:S2:1264:C:H42 | 1.58 | 0.51 |
| 40:L5:93:G:H2' | 40:L5:94:A:C8 | 2.46 | 0.51 |
| 40:L5:1604:G:H2' | 40:L5:1605:G:C8 | 2.45 | 0.51 |
| 40:L5:2754:G:OP2 | 65:LZ:133:LYS:NZ | 2.44 | 0.51 |
| 40:L5:3689:G:O2' | 40:L5:3818:UY1:OP2 | 2.29 | 0.51 |
| 40:L5:4075:U:OP1 | 49:LG:249:ARG:NH2 | 2.44 | 0.51 |
| 47:LE:177:GLY:HA3 | 47:LE:182:ASN:HD21 | 1.74 | 0.51 |
| 19:S2:1113:A:H2' | 19:S2:1114:U:C6 | 2.45 | 0.51 |
| 33:Sc:14:VAL:HA | 33:Sc:32:VAL:HG12 | 1.92 | 0.51 |
| 36:Sg:254:PRO:HA | 36:Sg:286:CYS:H | 1.75 | 0.51 |
| 40:L5:2630:U:OP1 | 61:LU:48:LYS:NZ | 2.39 | 0.51 |
| 40:L5:4537:C:H2' | 40:L5:4538:G:C8 | 2.43 | 0.51 |
| 42:L8:47:C:H1' | 42:L8:61:A:H2' | 1.92 | 0.51 |
| 44:LB:119:TYR:OH | 44:LB:129:ALA:N | 2.43 | 0.51 |
| 46:LD:223:PHE:HB3 | 46:LD:226:TYR:HB2 | 1.91 | 0.51 |
| 52:LJ:118:LYS:NZ | 52:LJ:119:TYR:O | 2.35 | 0.51 |
| 2:SB:224:GLU:HG3 | 2:SB:227:LYS:H | 1.75 | 0.51 |
| 19:S2:1253:A:OP2 | 19:S2:1526:G:N2 | 2.39 | 0.51 |
| 24:SF:201:LYS:HA | 24:SF:204:ARG:HE | 1.75 | 0.51 |
| 35:Sf:132:MET:HG2 | 35:Sf:141:CYS:SG | 2.51 | 0.51 |
| 40:L5:216:C:OP2 | 40:L5:219:G:O2' | 2.28 | 0.51 |
| 40:L5:1751:A:H2' | 40:L5:1752:G:C8 | 2.46 | 0.51 |
| 40:L5:1972:G:H2' | 40:L5:1973:G:C8 | 2.46 | 0.51 |
| 40:L5:3710:G:O2' | 40:L5:3712:A:OP2 | 2.25 | 0.51 |
| 5:SG:84:TYR:OH | 5:SG:91:GLU:O | 2.29 | 0.51 |
| 19:S2:65:C:O2' | 19:S2:67:C:OP1 | 2.25 | 0.51 |
| 19:S2:980:A:H2' | 19:S2:981:A:C8 | 2.46 | 0.51 |
| 19:S2:1220:A:N3 | 19:S2:1677:U:O2' | 2.36 | 0.51 |
| 20:LR:96:MET:SD | 20:LR:100:ARG:NH2 | 2.84 | 0.51 |
| 40:L5:188:G:N1 | 40:L5:191:G:O6 | 2.38 | 0.51 |
| 40:L5:347:A:H2' | 40:L5:348:G:C8 | 2.46 | 0.51 |
| 40:L5:444:G:H2' | 40:L5:445:U:C6 | 2.46 | 0.51 |
| 40:L5:2295:C:H2' | 40:L5:2296:G:C8 | 2.43 | 0.51 |
| 40:L5:3680:U:OP1 | 43:LA:54:ARG:NH2 | 2.39 | 0.51 |
| 40:L5:3916:G:H2' | 40:L5:3917:A:H8 | 1.76 | 0.51 |
| 41:L7:87:G:N2 | 41:L7:90:A:OP2 | 2.40 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:291:G:H2' | 19:S2:292:A:C8 | 2.46 | 0.51 |
| 19:S2:604:A:O2' | 19:S2:605:A:O4' | 2.27 | 0.51 |
| 19:S2:928:G:H1 | 19:S2:1013:U:H3 | 1.59 | 0.51 |
| 40:L5:10:A:H2' | 40:L5:11:G:C8 | 2.45 | 0.51 |
| 40:L5:107:G:OP2 | 53:LL:42:LYS:NZ | 2.44 | 0.51 |
| 40:L5:1179:U:H3' | 40:L5:1180:C:H5" | 1.92 | 0.51 |
| 40:L5:1895:G:O2' | 40:L5:1907:A:N3 | 2.42 | 0.51 |
| 40:L5:3898:G:H5' | 44:LB:254:ILE:HG13 | 1.93 | 0.51 |
| 40:L5:4991:U:H2' | 40:L5:4992:G:H8 | 1.74 | 0.51 |
| 41:L7:7:G:OP1 | 46:LD:33:ARG:NH1 | 2.44 | 0.51 |
| 42:L8:8:U:H2' | 42:L8:9:A:C8 | 2.45 | 0.51 |
| 42:L8:75:OMG:OP2 | 64:LY:74:TYR:OH | 2.25 | 0.51 |
| 44:LB:302:ASN:HB2 | 44:LB:313:SER:HA | 1.93 | 0.51 |
| 1:SA:37:TYR:CG | 1:SA:162:PRO:HG3 | 2.46 | 0.51 |
| 2:SB:115:LYS:HG2 | 19:S2:1869:A:C5 | 2.45 | 0.51 |
| 8:SJ:18:ARG:HH21 | 19:S2:4:C:H1' | 1.75 | 0.51 |
| 19:S2:339:A:H2 | 19:S2:340:C:H41 | 1.58 | 0.51 |
| 19:S2:482:G:N1 | 19:S2:485:A:OP2 | 2.41 | 0.51 |
| 19:S2:1103:C:H2' | 19:S2:1104:G:C8 | 2.46 | 0.51 |
| 19:S2:1459:G:OP2 | 36:Sg:280:LYS:NZ | 2.31 | 0.51 |
| 40:L5:325:U:H2' | 40:L5:326:C:C6 | 2.46 | 0.51 |
| 40:L5:1695:U:H2' | 40:L5:1696:C:H6 | 1.75 | 0.51 |
| 40:L5:2490:U:H3' | 40:L5:2491:C:C6 | 2.45 | 0.51 |
| 40:L5:3848:U:H2' | 40:L5:3849:A:H8 | 1.76 | 0.51 |
| 40:L5:4578:G:H2' | 40:L5:4579:PSU:H6 | 1.75 | 0.51 |
| 41:L7:13:A:OP2 | 41:L7:66:G:N2 | 2.40 | 0.51 |
| 41:L7:99:G:OP2 | 59:LS:55:LYS:NZ | 2.33 | 0.51 |
| 47:LE:227:HIS:NE2 | 47:LE:229:GLU:O | 2.44 | 0.51 |
| 5:SG:139:SER:OG | 19:S2:144:U:OP2 | 2.27 | 0.51 |
| 19:S2:1004:PSU:H2' | 19:S2:1005:G:H8 | 1.75 | 0.51 |
| 19:S2:1736:G:H2' | 19:S2:1737:G:H8 | 1.75 | 0.51 |
| 40:L5:418:A:H4' | 40:L5:2311:C:H5' | 1.93 | 0.51 |
| 40:L5:724:C:H1' | 45:LC:343:GLN:HG2 | 1.93 | 0.51 |
| 40:L5:1772:C:H2' | 40:L5:1773:U:H6 | 1.76 | 0.51 |
| 40:L5:1968:G:H4' | 83:Ls:112:ARG:HH12 | 1.76 | 0.51 |
| 40:L5:2897:G:H2' | 40:L5:2898:G:C8 | 2.46 | 0.51 |
| 40:L5:4069:U:H2' | 40:L5:4070:U:C6 | 2.46 | 0.51 |
| 40:L5:4246:G:H2' | 40:L5:4247:G:C8 | 2.46 | 0.51 |
| 40:L5:4262:C:H2' | 40:L5:4263:C:H6 | 1.76 | 0.51 |
| 40:L5:4274:A:H2' | 40:L5:4275:G:C8 | 2.45 | 0.51 |
| 41:L7:55:A:H4' | 52:LJ:155:HIS:HB2 | 1.93 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:LF:222:LYS:N | 48:LF:232:ASP:OD2 | 2.41 | 0.51 |
| 3:SC:91:SER:HB3 | 3:SC:156:ILE:HG23 | 1.93 | 0.51 |
| 19:S2:287:U:H2' | 19:S2:288:G:C8 | 2.46 | 0.51 |
| 19:S2:919:A:O2' | 19:S2:1020:A:N1 | 2.33 | 0.51 |
| 19:S2:1493:C:N3 | 19:S2:1500:G:O6 | 2.44 | 0.51 |
| 40:L5:132:G:C2 | 40:L5:133:C:H1' | 2.46 | 0.51 |
| 40:L5:287:U:H2' | 40:L5:288:G:C8 | 2.46 | 0.51 |
| 40:L5:1732:C:H5" | 60:LT:43:LYS:HE2 | 1.92 | 0.51 |
| 40:L5:2686:G:O2' | 40:L5:2688:G:N7 | 2.37 | 0.51 |
| 40:L5:3938:G:N2 | 40:L5:4171:C:OP2 | 2.40 | 0.51 |
| 40:L5:4097:G:N7 | 40:L5:4099:G:N2 | 2.58 | 0.51 |
| 59:LS:4:SER:HB3 | 59:LS:111:ARG:HH22 | 1.76 | 0.51 |
| 62:LV:62:MET:HE1 | 62:LV:78:PRO:HG3 | 1.93 | 0.51 |
| 9:SL:23:VAL:HG23 | 9:SL:25:LEU:HG | 1.93 | 0.50 |
| 19:S2:1039:C:H2' | 19:S2:1040:G:H8 | 1.74 | 0.50 |
| 19:S2:1289:U:C5 | 35:Sf:97:LYS:HE2 | 2.46 | 0.50 |
| 23:SD:140:GLY:HA3 | 23:SD:182:LEU:HD12 | 1.93 | 0.50 |
| 40:L5:418:A:H2' | 40:L5:419:A:C8 | 2.46 | 0.50 |
| 40:L5:2257:C:O2' | 40:L5:2259:G:OP1 | 2.29 | 0.50 |
| 40:L5:2285:A:H2' | 40:L5:2286:G:H8 | 1.76 | 0.50 |
| 40:L5:2520:C:H2' | 40:L5:2521:G:C8 | 2.46 | 0.50 |
| 40:L5:4173:G:H2' | 40:L5:4174:U:C6 | 2.46 | 0.50 |
| 3:SC:138:GLY:HA3 | 3:SC:162:ILE:HD13 | 1.94 | 0.50 |
| 7:SI:44:HIS:ND1 | 19:S2:1740:C:OP1 | 2.44 | 0.50 |
| 7:SI:87:ASN:HB3 | 7:SI:90:LEU:HD23 | 1.92 | 0.50 |
| 19:S2:170:A:H2' | 19:S2:171:A:C8 | 2.47 | 0.50 |
| 19:S2:1058:A:OP1 | 38:Pt:38:C:O2' | 2.29 | 0.50 |
| 19:S2:1523:C:H2' | 19:S2:1524:G:H8 | 1.75 | 0.50 |
| 19:S2:1585:U:O2' | 19:S2:1587:G:OP2 | 2.26 | 0.50 |
| 36:Sg:167:SER:OG | 36:Sg:175:LYS:O | 2.27 | 0.50 |
| 37:At:68:G:H2' | 37:At:69:A:C8 | 2.45 | 0.50 |
| 40:L5:137:G:H2' | 40:L5:138:G:H8 | 1.77 | 0.50 |
| 40:L5:359:A:N3 | 40:L5:363:A:O2' | 2.44 | 0.50 |
| 40:L5:2033:A:OP1 | 59:LS:88:SER:OG | 2.27 | 0.50 |
| 40:L5:4622:A:H2' | 40:L5:4623:OMG:H8 | 1.76 | 0.50 |
| 59:LS:71:SER:O | 59:LS:76:LYS:NZ | 2.39 | 0.50 |
| 71:Lf:54:LYS:O | 71:Lf:66:LYS:NZ | 2.38 | 0.50 |
| 83:Ls:30:VAL:HG21 | 83:Ls:187:LEU:HG | 1.93 | 0.50 |
| 84:Lt:104:ILE:HG13 | 84:Lt:106:PHE:HD2 | 1.76 | 0.50 |
| 9:SL:5:GLN:OE1 | 9:SL:11:GLN:N | 2.42 | 0.50 |
| 19:S2:600:G:H2' | 19:S2:601:OMG:H8 | 1.76 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1812:U:H2' | 19:S2:1813:A:H8 | 1.77 | 0.50 |
| 31:SU:26:SER:HB3 | 31:SU:110:VAL:HG23 | 1.93 | 0.50 |
| 40:L5:1897:A:O5' | 58:LQ:2:GLY:N | 2.44 | 0.50 |
| 40:L5:3867:A2M:H8 | 40:L5:3867:A2M:OP2 | 2.11 | 0.50 |
| 40:L5:4458:C:H2' | 40:L5:4459:U:C6 | 2.47 | 0.50 |
| 5:SG:167:LYS:HZ3 | 5:SG:169:PRO:HA | 1.76 | 0.50 |
| 19:S2:1689:C:H2' | 19:S2:1690:U:H6 | 1.75 | 0.50 |
| 26:SM:128:PHE:HA | 26:SM:131:LYS:HG2 | 1.92 | 0.50 |
| 29:SS:98:VAL:HG13 | 29:SS:103:LEU:HD12 | 1.93 | 0.50 |
| 40:L5:88:A:N7 | 58:LQ:173:LYS:NZ | 2.56 | 0.50 |
| 40:L5:1273:G:C6 | 47:LE:73:TYR:HB2 | 2.47 | 0.50 |
| 40:L5:3718:A2M:H2' | 40:L5:3719:A:O4' | 2.11 | 0.50 |
| 40:L5:4638:U:H3' | 40:L5:4639:G:H21 | 1.76 | 0.50 |
| 6:SH:27:LEU:O | 6:SH:37:LYS:NZ | 2.44 | 0.50 |
| 19:S2:563:G:N7 | 19:S2:586:G:N2 | 2.59 | 0.50 |
| 19:S2:1392:U:H2' | 19:S2:1393:G:H8 | 1.77 | 0.50 |
| 20:LR:74:ARG:NE | 40:L5:2891:U:OP2 | 2.33 | 0.50 |
| 28:SQ:102:GLU:O | 28:SQ:106:LYS:N | 2.43 | 0.50 |
| 40:L5:964:A:H2' | 40:L5:965:G:H4' | 1.94 | 0.50 |
| 40:L5:1526:G:H2' | 40:L5:1527:A:H8 | 1.77 | 0.50 |
| 40:L5:2898:G:H2' | 40:L5:2899:C:H6 | 1.77 | 0.50 |
| 40:L5:4220:6MZ:O5' | 40:L5:4220:6MZ:H8 | 2.11 | 0.50 |
| 40:L5:4966:A:H5" | 44:LB:128:LYS:HG3 | 1.94 | 0.50 |
| 42:L8:8:U:H2' | 42:L8:9:A:H8 | 1.76 | 0.50 |
| 43:LA:146:THR:N | 43:LA:158:ILE:O | 2.42 | 0.50 |
| 44:LB:117:ARG:HA | 44:LB:177:LYS:HD2 | 1.93 | 0.50 |
| 2:SB:123:ALA:HB2 | 2:SB:165:ARG:HG3 | 1.93 | 0.50 |
| 5:SG:133:LEU:HD12 | 19:S2:65:C:C4 | 2.47 | 0.50 |
| 19:S2:353:C:H2' | 19:S2:354:OMU:H6 | 1.93 | 0.50 |
| 19:S2:898:U:H2' | 19:S2:900:C:H1' | 1.92 | 0.50 |
| 19:S2:1274:G:H5" | 25:SK:47:LYS:HD2 | 1.94 | 0.50 |
| 23:SD:215:ASP:OD1 | 23:SD:216:GLU:N | 2.41 | 0.50 |
| 40:L5:1207:C:H2' | 40:L5:1208:G:C8 | 2.47 | 0.50 |
| 40:L5:1326:A2M:OP2 | 40:L5:4445:U:O2' | 2.29 | 0.50 |
| 40:L5:1333:A:H2' | 40:L5:1334:A:C8 | 2.45 | 0.50 |
| 40:L5:1914:C:H4' | 56:LO:89:PRO:HD3 | 1.93 | 0.50 |
| 40:L5:3805:U:H2' | 40:L5:3806:G:H8 | 1.76 | 0.50 |
| 40:L5:4503:A:H2' | 40:L5:4504:C:C6 | 2.46 | 0.50 |
| 40:L5:4612:C:C2 | 50:LH:120:GLU:HB2 | 2.46 | 0.50 |
| 40:L5:4680:G:H2' | 40:L5:4681:A:C8 | 2.46 | 0.50 |
| 19:S2:558:G:H1' | 19:S2:559:G:C8 | 2.47 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:654:A:OP2 | 19:S2:655:A:O2' | 2.26 | 0.50 |
| 36:Sg:193:GLY:HA3 | 36:Sg:212:LYS:HB3 | 1.93 | 0.50 |
| 40:L5:907:C:H2' | 40:L5:908:G:C8 | 2.47 | 0.50 |
| 40:L5:2448:G:OP2 | 40:L5:2510:G:N1 | 2.30 | 0.50 |
| 40:L5:4507:A:H2' | 40:L5:4508:C:C6 | 2.47 | 0.50 |
| 40:L5:4704:C:H2' | 40:L5:4705:A:H8 | 1.77 | 0.50 |
| 40:L5:5037:U:H2' | 40:L5:5038:A:C8 | 2.47 | 0.50 |
| 83:Ls:50:LYS:O | 83:Ls:92:LYS:NZ | 2.44 | 0.50 |
| 84:Lt:119:ARG:HD2 | 84:Lt:129:ILE:HD11 | 1.94 | 0.50 |
| 19:S2:880:G:H3' | 19:S2:881:G:H8 | 1.77 | 0.50 |
| 19:S2:1244:PSU:H2' | 19:S2:1245:G:H8 | 1.76 | 0.50 |
| 19:S2:1648:G:N2 | 19:S2:1675:A:OP2 | 2.44 | 0.50 |
| 28:SQ:39:LEU:HD11 | 28:SQ:51:LEU:HB3 | 1.93 | 0.50 |
| 40:L5:1628:C:H2' | 40:L5:1629:G:C8 | 2.47 | 0.50 |
| 40:L5:3788:C:N4 | 40:L5:3812:C:O4' | 2.45 | 0.50 |
| 40:L5:4273:A:H2' | 40:L5:4274:A:C8 | 2.47 | 0.50 |
| 64:LY:4:ASN:HB3 | 64:LY:7:VAL:HG12 | 1.93 | 0.50 |
| 19:S2:656:G:H21 | 19:S2:663:C:H5" | 1.77 | 0.50 |
| 24:SF:28:VAL:HG12 | 24:SF:110:GLN:HB2 | 1.94 | 0.50 |
| 40:L5:676:C:H2' | 40:L5:677:G:C8 | 2.47 | 0.50 |
| 40:L5:2284:G:OP1 | 66:La:7:LYS:NZ | 2.34 | 0.50 |
| 40:L5:2361:G:O2' | 40:L5:3859:G:O6 | 2.27 | 0.50 |
| 40:L5:3619:G:H22 | 40:L5:3624:A:H1' | 1.77 | 0.50 |
| 41:L7:6:C:O2' | 46:LD:50:ARG:NH2 | 2.45 | 0.50 |
| 43:LA:143:THR:HG23 | 43:LA:145:LYS:HG2 | 1.93 | 0.50 |
| 80:Lo:36:GLN:HB3 | 80:Lo:39:ARG:HH21 | 1.76 | 0.50 |
| 5:SG:192:ILE:HD12 | 5:SG:195:LYS:HD2 | 1.93 | 0.49 |
| 9:SL:85:THR:HG21 | 19:S2:373:G:H4' | 1.94 | 0.49 |
| 19:S2:1454:A:H2 | 19:S2:1476:A:H1' | 1.76 | 0.49 |
| 19:S2:1512:C:H5" | 34:Sd:8:TRP:HZ3 | 1.76 | 0.49 |
| 31:SU:104:ILE:HG13 | 31:SU:105:SER:H | 1.76 | 0.49 |
| 40:L5:119:G:O4' | 49:LG:132:ARG:NH2 | 2.39 | 0.49 |
| 40:L5:2540:C:H2' | 40:L5:2541:G:H8 | 1.77 | 0.49 |
| 40:L5:2757:A:H2' | 40:L5:2758:G:C8 | 2.47 | 0.49 |
| 40:L5:2835:A:H2' | 40:L5:2836:A:C8 | 2.47 | 0.49 |
| 47:LE:243:THR:HG22 | 47:LE:245:GLN:H | 1.77 | 0.49 |
| 82:Lr:28:GLU:OE2 | 82:Lr:31:ASN:ND2 | 2.45 | 0.49 |
| 84:Lt:22:VAL:HA | 84:Lt:48:LYS:HE3 | 1.94 | 0.49 |
| 3:SC:187:ARG:NH1 | 3:SC:189:GLY:O | 2.45 | 0.49 |
| 4:SE:80:ILE:HG23 | 4:SE:81:THR:HG23 | 1.94 | 0.49 |
| 6:SH:35:ASP:O | 6:SH:39:GLN:NE2 | 2.44 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 11:SO:44:VAL:HG13 | 11:SO:53:ILE:HB | 1.94 | 0.49 |
| 19:S2:1217:A:H2' | 19:S2:1218:C:H6 | 1.77 | 0.49 |
| 19:S2:1294:G:N1 | 19:S2:1306:U:O4 | 2.45 | 0.49 |
| 19:S2:1593:C:H2' | 19:S2:1594:A:H8 | 1.76 | 0.49 |
| 23:SD:64:ARG:HH12 | 25:SK:73:ASN:HD21 | 1.60 | 0.49 |
| 40:L5:108:A:O2' | 40:L5:334:A:N6 | 2.41 | 0.49 |
| 40:L5:2324:C:O2' | 70:Le:98:GLU:OE2 | 2.27 | 0.49 |
| 40:L5:2663:G:H2' | 40:L5:2664:G:H8 | 1.76 | 0.49 |
| 40:L5:2882:A:OP1 | 40:L5:3625:G:N1 | 2.44 | 0.49 |
| 40:L5:2897:G:H2' | 40:L5:2898:G:H8 | 1.76 | 0.49 |
| 40:L5:3598:C:H2' | 40:L5:3599:A:C8 | 2.47 | 0.49 |
| 40:L5:4524:G:C2 | 44:LB:252:ALA:HB1 | 2.47 | 0.49 |
| 40:L5:4774:C:O2' | 40:L5:4775:C:O2 | 2.27 | 0.49 |
| 40:L5:4926:C:H5" | 40:L5:4927:G:H21 | 1.77 | 0.49 |
| 40:L5:4943:A:OP1 | 47:LE:158:ARG:NH2 | 2.45 | 0.49 |
| 43:LA:144:LYS:O | 43:LA:160:SER:N | 2.45 | 0.49 |
| 67:Lb:102:PRO:O | 67:Lb:109:ARG:NH2 | 2.43 | 0.49 |
| 6:SH:57:ARG:HG2 | 6:SH:172:THR:HG22 | 1.93 | 0.49 |
| 8:SJ:164:PRO:HB3 | 8:SJ:170:PRO:HA | 1.94 | 0.49 |
| 19:S2:164:A:H2' | 19:S2:165:G:C4 | 2.47 | 0.49 |
| 40:L5:173:C:H5" | 53:LL:129:ARG:HH12 | 1.76 | 0.49 |
| 40:L5:268:G:H2' | 40:L5:269:G:H8 | 1.77 | 0.49 |
| 40:L5:351:C:OP2 | 45:LC:197:ARG:NH1 | 2.42 | 0.49 |
| 40:L5:1070:G:O2' | 40:L5:1071:C:O5' | 2.30 | 0.49 |
| 40:L5:1279:A:O2' | 40:L5:1281:G:N7 | 2.44 | 0.49 |
| 40:L5:1680:G:O6 | 87:L5:5262:SPM:N1 | 2.45 | 0.49 |
| 40:L5:3923:A:H2' | 40:L5:3924:C:C6 | 2.47 | 0.49 |
| 40:L5:4584:A:H2' | 40:L5:4585:U:O4' | 2.11 | 0.49 |
| 41:L7:64:G:H2' | 41:L7:65:G:H8 | 1.78 | 0.49 |
| 42:L8:67:U:H2' | 42:L8:68:G:C8 | 2.47 | 0.49 |
| 50:LH:102:ASN:HB2 | 50:LH:115:ARG:HB2 | 1.93 | 0.49 |
| 51:LI:93:PRO:HB2 | 51:LI:125:THR:HB | 1.94 | 0.49 |
| 57:LP:120:ASN:O | 57:LP:145:HIS:N | 2.41 | 0.49 |
| 71:Lf:78:HIS:N | 71:Lf:83:MET:O | 2.41 | 0.49 |
| 84:Lt:65:GLN:HG3 | 84:Lt:67:ARG:H | 1.77 | 0.49 |
| 5:SG:11:GLY:HA2 | 19:S2:166:A2M:HM'1 | 1.94 | 0.49 |
| 15:SY:20:ARG:NH2 | 15:SY:22:GLN:OE1 | 2.43 | 0.49 |
| 19:S2:319:C:H2' | 19:S2:320:G:H8 | 1.77 | 0.49 |
| 19:S2:406:PSU:H2' | 19:S2:408:A:H8 | 1.77 | 0.49 |
| 23:SD:158:ILE:H | 23:SD:189:MET:HE1 | 1.78 | 0.49 |
| 27:SP:20:VAL:HG23 | 27:SP:24:GLN:HE21 | 1.76 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 36:Sg:196:ASN:HD22 | 36:Sg:237:ASN:HA | 1.77 | 0.49 |
| 40:L5:57:G:H5” | 55:LN:154:PRO:HB2 | 1.95 | 0.49 |
| 40:L5:1327:C:H2’ | 40:L5:1328:G:C8 | 2.48 | 0.49 |
| 40:L5:1334:A:H2’ | 40:L5:1335:G:H8 | 1.77 | 0.49 |
| 40:L5:1857:C:H2’ | 40:L5:1858:A:C8 | 2.46 | 0.49 |
| 40:L5:2323:C:H2’ | 40:L5:2324:C:H6 | 1.76 | 0.49 |
| 40:L5:2683:C:H2’ | 40:L5:2684:C:H6 | 1.78 | 0.49 |
| 40:L5:2884:G:H2’ | 40:L5:2885:A:C8 | 2.46 | 0.49 |
| 40:L5:4581:G:OP2 | 44:LB:26:ARG:NH2 | 2.46 | 0.49 |
| 52:LJ:52:LYS:HB3 | 52:LJ:65:ASN:HA | 1.95 | 0.49 |
| 19:S2:866:PSU:H2’ | 19:S2:867:OMG:C8 | 2.46 | 0.49 |
| 19:S2:1259:A:H62 | 19:S2:1518:C:H3’ | 1.76 | 0.49 |
| 19:S2:1347:U:H3’ | 19:S2:1348:G:H21 | 1.78 | 0.49 |
| 19:S2:1414:A:H2’ | 19:S2:1415:C:C6 | 2.47 | 0.49 |
| 36:Sg:68:ASP:HB3 | 36:Sg:111:VAL:HG12 | 1.93 | 0.49 |
| 40:L5:29:G:H5” | 55:LN:172:ARG:HG2 | 1.95 | 0.49 |
| 40:L5:662:C:H2’ | 40:L5:663:G:H8 | 1.77 | 0.49 |
| 40:L5:1281:G:H5’ | 45:LC:323:ARG:HB2 | 1.94 | 0.49 |
| 40:L5:1667:G:N1 | 40:L5:2281:U:OP2 | 2.36 | 0.49 |
| 40:L5:1756:U:O2’ | 40:L5:1758:G:OP2 | 2.23 | 0.49 |
| 40:L5:1847:C:H2’ | 40:L5:1848:C:C6 | 2.48 | 0.49 |
| 40:L5:2671:C:H2’ | 40:L5:2672:C:C6 | 2.48 | 0.49 |
| 40:L5:3650:C:OP1 | 43:LA:217:GLN:NE2 | 2.39 | 0.49 |
| 40:L5:3944:G:H1 | 40:L5:4069:U:H3 | 1.61 | 0.49 |
| 47:LE:270:TYR:OH | 54:LM:106:ASP:OD2 | 2.21 | 0.49 |
| 57:LP:5:SER:OG | 57:LP:147:GLU:OE2 | 2.28 | 0.49 |
| 57:LP:84:PRO:HB2 | 57:LP:87:SER:HB2 | 1.94 | 0.49 |
| 59:LS:76:LYS:NZ | 59:LS:100:LEU:O | 2.42 | 0.49 |
| 69:Ld:92:ARG:HA | 69:Ld:102:LEU:HD23 | 1.94 | 0.49 |
| 83:Ls:65:ILE:HB | 83:Ls:69:LEU:HD12 | 1.93 | 0.49 |
| 9:SL:8:ARG:NH2 | 19:S2:390:C:O2’ | 2.42 | 0.49 |
| 11:SO:30:VAL:HG23 | 11:SO:47:LEU:HD23 | 1.95 | 0.49 |
| 19:S2:486:A:H1’ | 19:S2:513:G:H22 | 1.77 | 0.49 |
| 19:S2:1670:C:H2’ | 19:S2:1671:G:C8 | 2.47 | 0.49 |
| 19:S2:1719:A:N6 | 19:S2:1814:G:O2’ | 2.45 | 0.49 |
| 27:SP:81:ARG:HB2 | 27:SP:117:GLY:HA3 | 1.95 | 0.49 |
| 46:LD:52:ILE:HB | 46:LD:63:GLN:HB2 | 1.94 | 0.49 |
| 4:SE:45:ILE:HA | 4:SE:61:VAL:HG21 | 1.95 | 0.49 |
| 16:Sa:43:ASN:OD1 | 16:Sa:66:LYS:NZ | 2.45 | 0.49 |
| 19:S2:388:U:H2’ | 19:S2:389:A:H8 | 1.78 | 0.49 |
| 19:S2:952:G:H2’ | 19:S2:953:C:C6 | 2.47 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1653:U:H3 | 19:S2:1671:G:H1 | 1.58 | 0.49 |
| 36:Sg:21:ILE:N | 36:Sg:288:SER:OG | 2.43 | 0.49 |
| 39:CI:71:ARG:NH1 | 40:L5:2624:G:OP1 | 2.35 | 0.49 |
| 40:L5:194:C:H1' | 64:LY:121:ARG:HH12 | 1.78 | 0.49 |
| 40:L5:1523:A:N3 | 40:L5:4389:C:O2' | 2.44 | 0.49 |
| 40:L5:1681:G:OP2 | 40:L5:1853:G:N1 | 2.32 | 0.49 |
| 40:L5:1837:A:OP2 | 60:LT:108:ARG:NH1 | 2.45 | 0.49 |
| 40:L5:2351:OMC:HM22 | 45:LC:95:MET:HG3 | 1.94 | 0.49 |
| 40:L5:2353:U:H2' | 40:L5:2354:G:H8 | 1.77 | 0.49 |
| 40:L5:4111:U:H2' | 40:L5:4112:C:H5 | 1.77 | 0.49 |
| 40:L5:4531:U:H4' | 40:L5:4532:PSU:H5" | 1.93 | 0.49 |
| 41:L7:60:G:H2' | 41:L7:61:G:H8 | 1.76 | 0.49 |
| 49:LG:246:SER:HA | 49:LG:249:ARG:HE | 1.77 | 0.49 |
| 66:La:75:LEU:HG | 66:La:113:GLY:HA2 | 1.94 | 0.49 |
| 2:SB:168:MET:HA | 2:SB:171:ILE:HG12 | 1.94 | 0.49 |
| 5:SG:15:LEU:HD22 | 19:S2:155:G:H4' | 1.95 | 0.49 |
| 5:SG:183:ARG:NH1 | 19:S2:317:C:OP2 | 2.46 | 0.49 |
| 19:S2:1392:U:H2' | 19:S2:1393:G:C8 | 2.48 | 0.49 |
| 35:Sf:107:LYS:NZ | 35:Sf:108:VAL:O | 2.46 | 0.49 |
| 36:Sg:35:SER:OG | 36:Sg:36:ARG:N | 2.46 | 0.49 |
| 40:L5:150:U:O4 | 49:LG:187:LYS:NZ | 2.41 | 0.49 |
| 40:L5:425:U:H2' | 40:L5:426:A:H8 | 1.78 | 0.49 |
| 40:L5:1292:C:H3' | 40:L5:1293:G:H21 | 1.76 | 0.49 |
| 40:L5:2075:G:H2' | 40:L5:2076:G:H8 | 1.77 | 0.49 |
| 40:L5:4356:G:H2' | 40:L5:4357:G:H8 | 1.78 | 0.49 |
| 41:L7:110:G:H2' | 41:L7:111:C:C6 | 2.48 | 0.49 |
| 42:L8:19:C:H2' | 42:L8:20:A:C8 | 2.46 | 0.49 |
| 59:LS:34:ALA:HB1 | 59:LS:39:VAL:HB | 1.93 | 0.49 |
| 71:Lf:14:TYR:HA | 71:Lf:26:ALA:HA | 1.95 | 0.49 |
| 80:Lo:33:LEU:HA | 80:Lo:38:LYS:HG2 | 1.95 | 0.49 |
| 83:Ls:47:LEU:HG | 83:Ls:51:ALA:HB3 | 1.95 | 0.49 |
| 11:SO:96:LYS:HD3 | 11:SO:132:VAL:HG11 | 1.94 | 0.49 |
| 13:SW:26:LEU:HB2 | 17:Sb:7:LEU:HD23 | 1.95 | 0.49 |
| 15:SY:34:THR:O | 19:S2:570:C:O2' | 2.31 | 0.49 |
| 19:S2:737:G:H8 | 19:S2:738:C:H4' | 1.77 | 0.49 |
| 19:S2:993:G:OP1 | 19:S2:1131:G:N2 | 2.38 | 0.49 |
| 19:S2:1317:C:H2' | 19:S2:1318:G:H8 | 1.77 | 0.49 |
| 34:Sd:17:GLY:HA2 | 34:Sd:27:ARG:HD3 | 1.94 | 0.49 |
| 37:At:43:A:H2' | 37:At:44:A:C8 | 2.48 | 0.49 |
| 40:L5:1258:G:H2' | 40:L5:1259:G:C8 | 2.48 | 0.49 |
| 40:L5:1516:G:H2' | 40:L5:1518:A:H62 | 1.78 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1555:G:O6 | 81:Lp:4:ARG:NH1 | 2.40 | 0.49 |
| 40:L5:2285:A:H2' | 40:L5:2286:G:C8 | 2.48 | 0.49 |
| 40:L5:4759:C:H2' | 40:L5:4760:G:C8 | 2.48 | 0.49 |
| 52:LJ:78:LYS:HE3 | 52:LJ:82:ILE:HD11 | 1.95 | 0.49 |
| 5:SG:183:ARG:HH22 | 19:S2:316:G:H5" | 1.78 | 0.49 |
| 19:S2:1401:A:H2' | 19:S2:1402:A:C8 | 2.47 | 0.49 |
| 19:S2:1501:C:H2' | 19:S2:1502:C:H6 | 1.78 | 0.49 |
| 19:S2:1797:U:H2' | 19:S2:1798:C:C6 | 2.48 | 0.49 |
| 37:At:63:G:H2' | 37:At:64:G:H8 | 1.77 | 0.49 |
| 40:L5:133:C:H2' | 40:L5:134:G:H4' | 1.94 | 0.49 |
| 40:L5:162:A:H2' | 40:L5:163:A:C8 | 2.48 | 0.49 |
| 40:L5:424:U:H2' | 40:L5:425:U:C6 | 2.48 | 0.49 |
| 40:L5:717:U:H2' | 40:L5:718:C:C6 | 2.47 | 0.49 |
| 40:L5:1097:C:H2' | 40:L5:1098:G:C8 | 2.48 | 0.49 |
| 40:L5:2407:G:O6 | 77:Ll:2:SER:OG | 2.27 | 0.49 |
| 40:L5:2622:G:H2' | 40:L5:2623:A:C8 | 2.47 | 0.49 |
| 40:L5:2784:C:H2' | 40:L5:2785:C:C6 | 2.48 | 0.49 |
| 40:L5:2811:G:N1 | 40:L5:2814:C:OP2 | 2.46 | 0.49 |
| 40:L5:3607:U:H2' | 40:L5:3608:A:C8 | 2.48 | 0.49 |
| 40:L5:3658:C:H2' | 40:L5:3659:G:C8 | 2.48 | 0.49 |
| 40:L5:4510:A:C2 | 40:L5:4592:C:H4' | 2.47 | 0.49 |
| 40:L5:5055:G:H2' | 40:L5:5056:A:C8 | 2.47 | 0.49 |
| 41:L7:28:C:O2' | 41:L7:54:A:N1 | 2.43 | 0.49 |
| 68:Lc:22:MET:O | 68:Lc:23:LYS:HG3 | 2.12 | 0.49 |
| 80:Lo:6:LYS:HG3 | 80:Lo:94:GLY:HA3 | 1.93 | 0.49 |
| 3:SC:165:VAL:HG21 | 3:SC:217:ALA:HB1 | 1.94 | 0.48 |
| 6:SH:126:HIS:HA | 6:SH:129:ILE:HG12 | 1.95 | 0.48 |
| 10:SN:99:ARG:HH12 | 10:SN:143:SER:HB3 | 1.78 | 0.48 |
| 19:S2:5:U:H2' | 19:S2:6:G:H8 | 1.78 | 0.48 |
| 19:S2:24:C:O2' | 19:S2:25:A:O5' | 2.31 | 0.48 |
| 19:S2:1240:A:C2 | 27:SP:100:LYS:HB2 | 2.48 | 0.48 |
| 40:L5:136:C:N4 | 73:Lh:77:LYS:O | 2.46 | 0.48 |
| 40:L5:921:C:H2' | 40:L5:922:C:C6 | 2.48 | 0.48 |
| 40:L5:1479:G:H2' | 40:L5:1480:C:C6 | 2.48 | 0.48 |
| 40:L5:1950:U:H2' | 40:L5:1951:G:C8 | 2.48 | 0.48 |
| 40:L5:2503:G:H1' | 40:L5:2505:C:H5 | 1.77 | 0.48 |
| 40:L5:2848:G:O2' | 40:L5:3838:U:O4 | 2.31 | 0.48 |
| 43:LA:116:LEU:HB3 | 43:LA:126:LEU:HB2 | 1.94 | 0.48 |
| 67:Lb:90:SER:HB2 | 67:Lb:95:ARG:HH12 | 1.78 | 0.48 |
| 5:SG:4:ASN:HB3 | 5:SG:110:ASN:HA | 1.95 | 0.48 |
| 21:LW:61:LYS:NZ | 40:L5:5038:A:OP1 | 2.42 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 31:SU:93:SER:H | 31:SU:97:ILE:HD11 | 1.79 | 0.48 |
| 38:Pt:6:C:H2' | 38:Pt:7:G:C8 | 2.48 | 0.48 |
| 40:L5:1327:C:H2' | 40:L5:1328:G:H8 | 1.78 | 0.48 |
| 40:L5:1876:U:H2' | 40:L5:1877:G:C8 | 2.48 | 0.48 |
| 40:L5:2640:G:H2' | 40:L5:2641:A:C8 | 2.47 | 0.48 |
| 40:L5:3819:G:H2' | 40:L5:3820:G:H8 | 1.77 | 0.48 |
| 40:L5:3877:A:O2' | 40:L5:4400:G:N2 | 2.42 | 0.48 |
| 40:L5:4459:U:H2' | 40:L5:4460:U:H6 | 1.77 | 0.48 |
| 40:L5:4643:G:H2' | 40:L5:4644:G:H8 | 1.78 | 0.48 |
| 40:L5:4685:U:H2' | 40:L5:4686:G:C8 | 2.48 | 0.48 |
| 40:L5:4699:U:H1' | 40:L5:4700:A:H5" | 1.94 | 0.48 |
| 41:L7:61:G:O2' | 46:LD:279:ARG:NH1 | 2.45 | 0.48 |
| 42:L8:6:C:H2' | 42:L8:7:U:C6 | 2.48 | 0.48 |
| 46:LD:111:ASN:ND2 | 46:LD:116:ASP:OD2 | 2.44 | 0.48 |
| 55:LN:4:TYR:HA | 55:LN:7:ILE:HD12 | 1.96 | 0.48 |
| 63:LX:140:LEU:HD23 | 63:LX:144:TYR:HB3 | 1.95 | 0.48 |
| 67:Lb:41:ARG:HH21 | 67:Lb:45:PHE:HE2 | 1.61 | 0.48 |
| 3:SC:107:LEU:HB3 | 3:SC:233:LEU:HD21 | 1.94 | 0.48 |
| 19:S2:27:A2M:H2' | 19:S2:28:U:O4' | 2.14 | 0.48 |
| 19:S2:1243:U:OP2 | 19:S2:1518:C:O2' | 2.29 | 0.48 |
| 21:LW:7:SER:HB2 | 21:LW:13:ILE:HD11 | 1.94 | 0.48 |
| 23:SD:74:GLN:NE2 | 23:SD:81:GLU:OE2 | 2.46 | 0.48 |
| 31:SU:21:ARG:N | 31:SU:115:THR:O | 2.41 | 0.48 |
| 40:L5:1480:C:O2' | 40:L5:1482:G:OP2 | 2.32 | 0.48 |
| 40:L5:3785:A2M:HM'1 | 40:L5:4537:C:H1' | 1.95 | 0.48 |
| 40:L5:4314:C:OP1 | 60:LT:70:HIS:ND1 | 2.46 | 0.48 |
| 44:LB:45:ALA:HB3 | 44:LB:183:ILE:HG23 | 1.95 | 0.48 |
| 2:SB:36:PRO:HB2 | 2:SB:38:MET:HG2 | 1.94 | 0.48 |
| 2:SB:132:GLY:O | 2:SB:219:LYS:NZ | 2.39 | 0.48 |
| 4:SE:75:LYS:NZ | 19:S2:122:G:OP1 | 2.37 | 0.48 |
| 4:SE:121:TYR:HA | 4:SE:163:ASP:HA | 1.96 | 0.48 |
| 19:S2:484:A2M:H8 | 19:S2:484:A2M:O5' | 2.13 | 0.48 |
| 19:S2:640:A:H2' | 19:S2:641:A:C8 | 2.47 | 0.48 |
| 19:S2:925:G:O6 | 19:S2:1017:U:O4 | 2.32 | 0.48 |
| 19:S2:1542:C:H4' | 30:ST:11:GLN:HB2 | 1.94 | 0.48 |
| 19:S2:1692:U:H2' | 19:S2:1693:G:H8 | 1.77 | 0.48 |
| 23:SD:47:GLU:HG2 | 23:SD:85:GLU:HB2 | 1.94 | 0.48 |
| 40:L5:422:C:H2' | 40:L5:423:G:H8 | 1.79 | 0.48 |
| 40:L5:1541:C:H5" | 43:LA:21:LYS:HG2 | 1.95 | 0.48 |
| 40:L5:1683:PSU:H2' | 40:L5:1684:A:C8 | 2.48 | 0.48 |
| 63:LX:141:ALA:HB3 | 63:LX:144:TYR:HD2 | 1.78 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:SE:179:ASN:HA | 4:SE:231:GLY:HA2 | 1.96 | 0.48 |
| 5:SG:22:ARG:NH2 | 44:LB:306:ASP:O | 2.44 | 0.48 |
| 9:SL:105:ARG:NH1 | 19:S2:355:G:OP1 | 2.44 | 0.48 |
| 10:SN:7:PRO:HG3 | 19:S2:996:A:H5" | 1.94 | 0.48 |
| 19:S2:1716:C:H2' | 19:S2:1717:C:H6 | 1.78 | 0.48 |
| 36:Sg:119:GLN:HB3 | 36:Sg:131:LEU:HD11 | 1.95 | 0.48 |
| 40:L5:56:A:H4' | 55:LN:157:LYS:HD2 | 1.94 | 0.48 |
| 40:L5:197:A:N6 | 40:L5:242:U:H3 | 2.12 | 0.48 |
| 40:L5:1180:C:H1' | 40:L5:1183:C:C2 | 2.49 | 0.48 |
| 40:L5:1824:G:H2' | 40:L5:1825:A:H8 | 1.79 | 0.48 |
| 40:L5:2327:G:H2' | 40:L5:2328:G:H8 | 1.77 | 0.48 |
| 40:L5:2663:G:H2' | 40:L5:2664:G:C8 | 2.48 | 0.48 |
| 40:L5:2764:A:H2' | 40:L5:2765:A:H8 | 1.78 | 0.48 |
| 40:L5:3927:U:H2' | 40:L5:3928:A:H8 | 1.79 | 0.48 |
| 40:L5:5002:U:O2 | 40:L5:5045:G:N2 | 2.34 | 0.48 |
| 42:L8:22:U:OP2 | 45:LC:196:MET:HG2 | 2.13 | 0.48 |
| 54:LM:7:VAL:N | 59:LS:152:PHE:O | 2.43 | 0.48 |
| 57:LP:13:LYS:HB3 | 57:LP:152:GLU:HB2 | 1.94 | 0.48 |
| 84:Lt:59:THR:H | 84:Lt:80:LEU:HD11 | 1.77 | 0.48 |
| 5:SG:13:GLN:HE21 | 19:S2:153:G:H21 | 1.60 | 0.48 |
| 17:Sb:67:THR:OG1 | 17:Sb:70:LYS:O | 2.26 | 0.48 |
| 17:Sb:68:GLY:HA2 | 19:S2:928:G:H21 | 1.78 | 0.48 |
| 19:S2:1143:A:O3' | 19:S2:1355:C:N4 | 2.47 | 0.48 |
| 19:S2:1457:U:H2' | 19:S2:1458:G:H8 | 1.79 | 0.48 |
| 40:L5:62:A:OP1 | 55:LN:172:ARG:NH1 | 2.47 | 0.48 |
| 40:L5:685:C:H4' | 40:L5:686:A:C4 | 2.48 | 0.48 |
| 40:L5:950:G:H2' | 40:L5:951:G:H8 | 1.79 | 0.48 |
| 40:L5:1472:C:N4 | 40:L5:1493:G:O6 | 2.47 | 0.48 |
| 40:L5:1554:A:OP2 | 81:Lp:4:ARG:NE | 2.36 | 0.48 |
| 40:L5:2535:G:H2' | 40:L5:2536:A:C8 | 2.49 | 0.48 |
| 40:L5:2902:G:N2 | 40:L5:3597:G:O6 | 2.46 | 0.48 |
| 40:L5:4069:U:H2' | 40:L5:4070:U:H6 | 1.78 | 0.48 |
| 40:L5:4503:A:H2' | 40:L5:4504:C:H6 | 1.77 | 0.48 |
| 40:L5:4676:G:OP1 | 44:LB:281:ASN:ND2 | 2.45 | 0.48 |
| 40:L5:4920:C:H2' | 40:L5:4921:C:H6 | 1.77 | 0.48 |
| 46:LD:120:GLU:O | 46:LD:248:ARG:NH1 | 2.46 | 0.48 |
| 64:LY:73:VAL:HA | 64:LY:80:ILE:HG22 | 1.96 | 0.48 |
| 1:SA:183:LEU:O | 1:SA:188:THR:OG1 | 2.32 | 0.48 |
| 8:SJ:176:LYS:HA | 8:SJ:179:LYS:HG2 | 1.94 | 0.48 |
| 9:SL:39:ASN:O | 19:S2:292:A:O2' | 2.26 | 0.48 |
| 19:S2:527:C:H2' | 19:S2:528:A:H8 | 1.78 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1348:G:N2 | 19:S2:1348:G:OP2 | 2.45 | 0.48 |
| 19:S2:1447:G:H2' | 19:S2:1448:A:C8 | 2.49 | 0.48 |
| 19:S2:1490:OMG:N2 | 31:SU:72:GLU:OE1 | 2.47 | 0.48 |
| 19:S2:1524:G:O2' | 38:Pt:30:G:OP1 | 2.32 | 0.48 |
| 19:S2:1532:C:H3' | 19:S2:1637:A:H62 | 1.77 | 0.48 |
| 40:L5:505:G:N2 | 40:L5:653:U:O2 | 2.36 | 0.48 |
| 40:L5:1645:C:H2' | 40:L5:1646:A:C8 | 2.49 | 0.48 |
| 40:L5:1733:G:N3 | 40:L5:4214:A:H2' | 2.29 | 0.48 |
| 40:L5:2297:G:H4' | 45:LC:242:PRO:HB2 | 1.96 | 0.48 |
| 40:L5:4657:U:O2' | 40:L5:4659:G:OP2 | 2.31 | 0.48 |
| 41:L7:63:C:H5' | 41:L7:64:G:H5" | 1.94 | 0.48 |
| 47:LE:91:THR:HG22 | 47:LE:108:LYS:HB3 | 1.96 | 0.48 |
| 49:LG:209:SER:HA | 49:LG:212:LYS:HG3 | 1.95 | 0.48 |
| 70:Le:88:LEU:HD12 | 70:Le:97:ALA:HB2 | 1.96 | 0.48 |
| 83:Ls:29:ILE:HG13 | 83:Ls:190:GLN:HB2 | 1.94 | 0.48 |
| 83:Ls:50:LYS:NZ | 83:Ls:93:GLU:OE1 | 2.46 | 0.48 |
| 1:SA:77:ILE:HG22 | 1:SA:99:ILE:HB | 1.95 | 0.48 |
| 4:SE:112:HIS:NE2 | 4:SE:237:SER:O | 2.47 | 0.48 |
| 4:SE:247:THR:OG1 | 4:SE:250:GLU:OE1 | 2.25 | 0.48 |
| 5:SG:146:ASN:HB2 | 21:LW:101:ARG:HH22 | 1.78 | 0.48 |
| 5:SG:174:PRO:HB3 | 19:S2:65:C:C6 | 2.48 | 0.48 |
| 7:SI:184:ARG:HD2 | 19:S2:219:U:H1' | 1.96 | 0.48 |
| 19:S2:1203:G:H2' | 19:S2:1204:A:C8 | 2.49 | 0.48 |
| 40:L5:417:G:OP1 | 40:L5:2329:U:O2' | 2.32 | 0.48 |
| 40:L5:436:C:H2' | 40:L5:437:G:C8 | 2.46 | 0.48 |
| 40:L5:1172:C:O2' | 40:L5:1173:G:H8 | 1.97 | 0.48 |
| 40:L5:2309:G:O2' | 42:L8:18:U:O2 | 2.32 | 0.48 |
| 40:L5:2745:A:H2' | 40:L5:2746:A:H8 | 1.79 | 0.48 |
| 40:L5:4881:U:O4 | 54:LM:116:LYS:NZ | 2.42 | 0.48 |
| 40:L5:4884:G:N7 | 47:LE:272:ARG:NH2 | 2.61 | 0.48 |
| 64:LY:2:LYS:HD2 | 64:LY:7:VAL:HG13 | 1.95 | 0.48 |
| 75:Lj:28:HIS:CE1 | 75:Lj:30:GLN:HB3 | 2.49 | 0.48 |
| 5:SG:2:LYS:HB2 | 5:SG:108:VAL:HG12 | 1.95 | 0.48 |
| 5:SG:156:TYR:OH | 21:LW:96:GLN:OE1 | 2.31 | 0.48 |
| 19:S2:388:U:H2' | 19:S2:389:A:C8 | 2.48 | 0.48 |
| 19:S2:1457:U:H2' | 19:S2:1458:G:C8 | 2.49 | 0.48 |
| 24:SF:28:VAL:HG11 | 24:SF:109:LEU:HB2 | 1.96 | 0.48 |
| 40:L5:94:A:H5" | 66:La:34:ASN:HB2 | 1.96 | 0.48 |
| 40:L5:159:C:OP2 | 74:Li:27:SER:N | 2.46 | 0.48 |
| 40:L5:433:A:N3 | 40:L5:3867:A2M:H4' | 2.28 | 0.48 |
| 40:L5:945:U:OP1 | 45:LC:342:ARG:NH2 | 2.44 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1269:G:HO2' | 40:L5:1440:U:HO2' | 1.58 | 0.48 |
| 40:L5:2079:G:H2' | 40:L5:2080:U:H6 | 1.79 | 0.48 |
| 40:L5:3688:U:OP2 | 43:LA:198:ARG:NH2 | 2.47 | 0.48 |
| 40:L5:3722:G:H2' | 40:L5:3723:A:C8 | 2.47 | 0.48 |
| 40:L5:4910:G:H1 | 56:LO:108:ILE:H | 1.62 | 0.48 |
| 47:LE:225:PRO:HG2 | 47:LE:226:ARG:HH11 | 1.78 | 0.48 |
| 53:LL:48:PRO:HG3 | 73:Lh:118:LYS:HE2 | 1.94 | 0.48 |
| 65:LZ:27:LYS:O | 65:LZ:42:LEU:N | 2.42 | 0.48 |
| 74:Li:45:ARG:NH2 | 74:Li:49:GLY:O | 2.39 | 0.48 |
| 76:Lk:26:LYS:HD3 | 76:Lk:69:LEU:HD22 | 1.96 | 0.48 |
| 78:Lm:99:CYS:HB3 | 78:Lm:115:CYS:HB3 | 1.96 | 0.48 |
| 2:SB:138:PHE:O | 2:SB:213:ARG:N | 2.47 | 0.48 |
| 4:SE:17:HIS:NE2 | 4:SE:39:ARG:O | 2.45 | 0.48 |
| 7:SI:116:HIS:CG | 7:SI:152:ARG:HH21 | 2.31 | 0.48 |
| 8:SJ:136:ARG:HD3 | 8:SJ:160:SER:HA | 1.96 | 0.48 |
| 11:SO:98:ARG:HG3 | 11:SO:134:PRO:HD3 | 1.96 | 0.48 |
| 14:SX:137:LYS:NZ | 19:S2:30:C:O3' | 2.47 | 0.48 |
| 15:SY:11:LYS:HB2 | 15:SY:24:VAL:HG12 | 1.95 | 0.48 |
| 19:S2:329:G:H2' | 19:S2:330:G:H8 | 1.79 | 0.48 |
| 19:S2:1221:G:H2' | 19:S2:1222:G:H8 | 1.79 | 0.48 |
| 19:S2:1581:C:H5' | 19:S2:1582:C:H5 | 1.78 | 0.48 |
| 20:LR:168:GLU:HA | 20:LR:171:LYS:HG2 | 1.96 | 0.48 |
| 40:L5:1779:U:H2' | 40:L5:1780:A:C8 | 2.48 | 0.48 |
| 40:L5:1973:G:H4' | 84:Lt:78:SER:H | 1.79 | 0.48 |
| 40:L5:2633:U:H2' | 40:L5:2634:C:C6 | 2.49 | 0.48 |
| 48:LF:90:ALA:HB2 | 48:LF:125:LEU:HD11 | 1.96 | 0.48 |
| 71:Lf:7:SER:HB2 | 71:Lf:103:VAL:HB | 1.96 | 0.48 |
| 2:SB:70:SER:OG | 2:SB:71:LEU:N | 2.47 | 0.47 |
| 5:SG:132:ARG:NE | 19:S2:151:C:O2' | 2.47 | 0.47 |
| 8:SJ:79:ARG:NH2 | 19:S2:820:U:OP2 | 2.39 | 0.47 |
| 19:S2:1113:A:N6 | 19:S2:1121:G:O6 | 2.47 | 0.47 |
| 19:S2:1566:G:O6 | 30:ST:101:ARG:NH1 | 2.45 | 0.47 |
| 21:LW:46:PRO:HB2 | 21:LW:52:THR:HG21 | 1.95 | 0.47 |
| 40:L5:1394:G:OP1 | 53:LL:186:ARG:NH1 | 2.47 | 0.47 |
| 40:L5:1697:G:H22 | 40:L5:2084:C:P | 2.36 | 0.47 |
| 40:L5:2018:C:H2' | 40:L5:2019:C:C6 | 2.49 | 0.47 |
| 40:L5:3809:G:OP2 | 40:L5:3809:G:N2 | 2.30 | 0.47 |
| 45:LC:110:ARG:O | 45:LC:113:ARG:NH1 | 2.46 | 0.47 |
| 48:LF:162:ILE:HD12 | 48:LF:167:ILE:HB | 1.96 | 0.47 |
| 51:LI:91:LEU:HD12 | 51:LI:135:ILE:HG23 | 1.95 | 0.47 |
| 58:LQ:63:LEU:N | 58:LQ:87:THR:O | 2.45 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 58:LQ:157:GLY:O | 58:LQ:188:ASN:ND2 | 2.46 | 0.47 |
| 1:SA:110:ASN:ND2 | 19:S2:1350:U:O2 | 2.46 | 0.47 |
| 3:SC:187:ARG:HD3 | 3:SC:192:LEU:HD12 | 1.97 | 0.47 |
| 4:SE:36:HIS:CE1 | 4:SE:85:GLY:HA3 | 2.49 | 0.47 |
| 5:SG:50:VAL:HG21 | 5:SG:111:LEU:HB3 | 1.94 | 0.47 |
| 7:SI:133:GLU:HA | 7:SI:136:ILE:HG12 | 1.96 | 0.47 |
| 19:S2:371:A:N3 | 19:S2:394:G:N2 | 2.62 | 0.47 |
| 19:S2:429:C:H2' | 19:S2:430:C:H6 | 1.79 | 0.47 |
| 19:S2:822:U:O4 | 19:S2:826:A:N7 | 2.47 | 0.47 |
| 19:S2:1174:PSU:H2' | 19:S2:1175:G:H8 | 1.79 | 0.47 |
| 19:S2:1414:A:H2' | 19:S2:1415:C:H6 | 1.79 | 0.47 |
| 36:Sg:176:VAL:HG23 | 36:Sg:185:LYS:HB2 | 1.96 | 0.47 |
| 40:L5:401:G:OP1 | 57:LP:16:LYS:NZ | 2.37 | 0.47 |
| 40:L5:1511:U:H2' | 40:L5:1512:G:C8 | 2.48 | 0.47 |
| 40:L5:4578:G:H2' | 40:L5:4579:PSU:C6 | 2.49 | 0.47 |
| 44:LB:46:PHE:HE2 | 44:LB:81:THR:HB | 1.79 | 0.47 |
| 44:LB:300:LYS:HG3 | 44:LB:311:ASP:HA | 1.96 | 0.47 |
| 64:LY:55:VAL:HG12 | 64:LY:106:ILE:HA | 1.96 | 0.47 |
| 1:SA:32:PHE:HA | 1:SA:35:GLU:HB2 | 1.95 | 0.47 |
| 1:SA:74:VAL:HG23 | 1:SA:121:LEU:HB3 | 1.95 | 0.47 |
| 5:SG:136:LYS:HB2 | 19:S2:65:C:H41 | 1.78 | 0.47 |
| 5:SG:227:GLN:HB3 | 5:SG:231:ARG:HH21 | 1.80 | 0.47 |
| 19:S2:113:G:H22 | 19:S2:292:A:H2' | 1.78 | 0.47 |
| 19:S2:656:G:N2 | 19:S2:663:C:H5" | 2.28 | 0.47 |
| 19:S2:1166:G:N2 | 19:S2:1193:U:O2 | 2.34 | 0.47 |
| 19:S2:1623:A:C6 | 29:SS:132:ARG:HD3 | 2.50 | 0.47 |
| 20:LR:110:ARG:NH1 | 40:L5:2665:U:OP2 | 2.42 | 0.47 |
| 22:SR:58:MET:HA | 22:SR:61:ILE:HG22 | 1.94 | 0.47 |
| 24:SF:102:LEU:HD21 | 32:SZ:110:THR:HB | 1.95 | 0.47 |
| 26:SM:83:LYS:HE2 | 26:SM:103:VAL:HG13 | 1.95 | 0.47 |
| 29:SS:106:LYS:HA | 29:SS:106:LYS:HD2 | 1.70 | 0.47 |
| 40:L5:509:A:N6 | 66:La:106:SER:OG | 2.47 | 0.47 |
| 40:L5:1336:G:H2' | 40:L5:2346:C:H42 | 1.78 | 0.47 |
| 40:L5:1692:C:H4' | 58:LQ:143:ARG:HH12 | 1.80 | 0.47 |
| 40:L5:1996:C:H42 | 40:L5:2000:G:N2 | 2.12 | 0.47 |
| 40:L5:2476:G:H2' | 40:L5:2477:A:H8 | 1.80 | 0.47 |
| 40:L5:2690:C:H2' | 40:L5:2691:U:C6 | 2.50 | 0.47 |
| 40:L5:3610:A:H2' | 40:L5:3611:A:C8 | 2.50 | 0.47 |
| 40:L5:3664:G:H2' | 40:L5:3665:G:C8 | 2.46 | 0.47 |
| 40:L5:4742:G:H2' | 40:L5:4743:G:C8 | 2.50 | 0.47 |
| 40:L5:4906:C:H2' | 40:L5:4907:G:H8 | 1.79 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 46:LD:183:TYR:HA | 46:LD:190:PHE:HA | 1.95 | 0.47 |
| 54:LM:30:VAL:HG23 | 54:LM:52:PHE:HZ | 1.79 | 0.47 |
| 62:LV:111:GLU:HG3 | 62:LV:131:ARG:HD3 | 1.96 | 0.47 |
| 15:SY:9:THR:H | 19:S2:837:A:N6 | 2.12 | 0.47 |
| 19:S2:404:G:H2' | 19:S2:405:G:C8 | 2.49 | 0.47 |
| 19:S2:1252:C:N4 | 28:SQ:146:ARG:O | 2.48 | 0.47 |
| 40:L5:665:C:H1' | 40:L5:668:C:H41 | 1.80 | 0.47 |
| 40:L5:1895:G:OP1 | 48:LF:96:ARG:NH2 | 2.47 | 0.47 |
| 40:L5:2898:G:H2' | 40:L5:2899:C:C6 | 2.50 | 0.47 |
| 40:L5:3928:A:OP1 | 55:LN:90:ASN:ND2 | 2.47 | 0.47 |
| 40:L5:4683:U:OP2 | 40:L5:4706:G:N1 | 2.38 | 0.47 |
| 40:L5:4913:G:H4' | 40:L5:4914:C:O5' | 2.15 | 0.47 |
| 42:L8:130:C:H2' | 42:L8:131:G:H8 | 1.79 | 0.47 |
| 43:LA:30:ARG:HB3 | 43:LA:74:GLU:HG3 | 1.96 | 0.47 |
| 49:LG:251:ALA:HA | 49:LG:254:GLU:HB2 | 1.96 | 0.47 |
| 60:LT:27:LEU:HB3 | 60:LT:31:MET:HE3 | 1.95 | 0.47 |
| 4:SE:247:THR:HG1 | 4:SE:250:GLU:CD | 2.19 | 0.47 |
| 6:SH:7:LYS:HE2 | 6:SH:10:LYS:HB3 | 1.96 | 0.47 |
| 7:SI:72:CYS:HG | 7:SI:112:TRP:CG | 2.32 | 0.47 |
| 15:SY:13:MET:HE1 | 15:SY:15:ASN:HB3 | 1.96 | 0.47 |
| 17:Sb:36:LYS:HB3 | 17:Sb:78:SER:HB2 | 1.96 | 0.47 |
| 19:S2:329:G:H2' | 19:S2:330:G:C8 | 2.49 | 0.47 |
| 19:S2:588:G:H4' | 19:S2:589:G:H5' | 1.96 | 0.47 |
| 21:LW:44:ARG:HD3 | 40:L5:3615:G:H1' | 1.97 | 0.47 |
| 40:L5:1637:A:OP1 | 40:L5:1640:C:N4 | 2.45 | 0.47 |
| 41:L7:23:A:H2' | 41:L7:24:C:C6 | 2.49 | 0.47 |
| 42:L8:148:A:H2' | 42:L8:149:G:C8 | 2.50 | 0.47 |
| 52:LJ:92:TYR:HB3 | 52:LJ:172:GLY:HA2 | 1.97 | 0.47 |
| 3:SC:253:PRO:HA | 3:SC:256:TRP:CE2 | 2.49 | 0.47 |
| 9:SL:13:GLN:HB2 | 9:SL:16:ILE:HD12 | 1.96 | 0.47 |
| 19:S2:414:A:H2' | 19:S2:415:A:H8 | 1.80 | 0.47 |
| 19:S2:484:A2M:HM'3 | 19:S2:484:A2M:H1' | 1.58 | 0.47 |
| 19:S2:1144:A:OP1 | 19:S2:1355:C:N4 | 2.48 | 0.47 |
| 19:S2:1253:A:H4' | 19:S2:1254:C:H5" | 1.96 | 0.47 |
| 19:S2:1521:C:H5' | 29:SS:129:LEU:HD22 | 1.97 | 0.47 |
| 19:S2:1822:A:H2' | 19:S2:1823:A:C8 | 2.49 | 0.47 |
| 40:L5:287:U:H2' | 40:L5:288:G:H8 | 1.78 | 0.47 |
| 40:L5:1086:C:H2' | 40:L5:1087:A:C8 | 2.48 | 0.47 |
| 40:L5:2266:C:O2 | 82:Lr:39:ARG:NH2 | 2.42 | 0.47 |
| 40:L5:2401:A2M:H1' | 40:L5:2401:A2M:HM'3 | 1.56 | 0.47 |
| 40:L5:3830:A2M:H1' | 40:L5:3830:A2M:HM'3 | 1.61 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:4860:G:H2' | 40:L5:4861:G:C8 | 2.49 | 0.47 |
| 40:L5:4967:A:H2' | 40:L5:4968:A:C8 | 2.49 | 0.47 |
| 45:LC:141:GLY:O | 45:LC:182:LYS:NZ | 2.48 | 0.47 |
| 54:LM:113:MET:HE3 | 54:LM:113:MET:HB3 | 1.85 | 0.47 |
| 3:SC:104:ASP:HA | 3:SC:130:ILE:HG22 | 1.95 | 0.47 |
| 10:SN:109:LYS:HD2 | 19:S2:1032:C:H5" | 1.97 | 0.47 |
| 19:S2:379:C:H2' | 19:S2:380:G:C8 | 2.49 | 0.47 |
| 19:S2:1049:A:OP2 | 19:S2:1068:G:N1 | 2.32 | 0.47 |
| 19:S2:1281:G:H3' | 19:S2:1282:A:H8 | 1.80 | 0.47 |
| 19:S2:1593:C:H2' | 19:S2:1594:A:C8 | 2.49 | 0.47 |
| 19:S2:1713:C:H2' | 19:S2:1714:U:C6 | 2.50 | 0.47 |
| 24:SF:30:ILE:HG23 | 24:SF:117:ILE:HD11 | 1.95 | 0.47 |
| 26:SM:79:VAL:HG11 | 26:SM:85:LEU:HB2 | 1.97 | 0.47 |
| 28:SQ:9:SER:N | 28:SQ:99:TYR:OH | 2.47 | 0.47 |
| 31:SU:20:ILE:HA | 31:SU:116:ILE:HA | 1.96 | 0.47 |
| 32:SZ:63:PRO:HG3 | 32:SZ:97:ILE:HD11 | 1.97 | 0.47 |
| 34:Sd:3:HIS:CE1 | 34:Sd:5:GLN:HB2 | 2.50 | 0.47 |
| 35:Sf:141:CYS:H | 35:Sf:145:CYS:HB3 | 1.80 | 0.47 |
| 37:At:1:G:H2' | 37:At:2:U:C6 | 2.50 | 0.47 |
| 40:L5:318:A:H2' | 40:L5:319:A:C8 | 2.48 | 0.47 |
| 40:L5:714:G:H2' | 40:L5:715:G:C8 | 2.49 | 0.47 |
| 40:L5:951:G:H2' | 40:L5:952:G:C8 | 2.50 | 0.47 |
| 40:L5:2374:A:H2' | 40:L5:2375:A:C8 | 2.50 | 0.47 |
| 40:L5:2611:A:H2' | 40:L5:2612:G:C8 | 2.50 | 0.47 |
| 40:L5:2765:A:H2' | 40:L5:2766:A:C8 | 2.49 | 0.47 |
| 40:L5:2901:G:H2' | 40:L5:2902:G:H5" | 1.97 | 0.47 |
| 40:L5:3688:U:H2' | 40:L5:3689:G:C8 | 2.49 | 0.47 |
| 40:L5:3867:A2M:HM'3 | 40:L5:3867:A2M:H1' | 1.53 | 0.47 |
| 40:L5:3917:A:H2' | 40:L5:3918:G:C8 | 2.49 | 0.47 |
| 42:L8:90:C:H2' | 42:L8:91:A:C8 | 2.50 | 0.47 |
| 42:L8:141:C:H2' | 42:L8:142:U:C6 | 2.49 | 0.47 |
| 44:LB:29:VAL:HA | 44:LB:220:ILE:HD13 | 1.97 | 0.47 |
| 51:LI:36:LEU:HD11 | 51:LI:69:ARG:HD2 | 1.96 | 0.47 |
| 52:LJ:63:ARG:HH12 | 80:Lo:103:VAL:HB | 1.80 | 0.47 |
| 80:Lo:69:ARG:HG3 | 80:Lo:82:MET:HE1 | 1.97 | 0.47 |
| 1:SA:106:GLY:N | 1:SA:136:GLU:OE2 | 2.47 | 0.47 |
| 3:SC:144:SER:HB3 | 3:SC:150:ALA:HB2 | 1.97 | 0.47 |
| 19:S2:1347:U:H2' | 19:S2:1348:G:N3 | 2.30 | 0.47 |
| 19:S2:1842:4AC:H2' | 19:S2:1843:G:H8 | 1.80 | 0.47 |
| 24:SF:22:LYS:HG3 | 24:SF:23:TRP:CD2 | 2.50 | 0.47 |
| 24:SF:68:ILE:HD11 | 24:SF:116:ILE:HG13 | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1669:A:OP1 | 67:Lb:18:ARG:NH2 | 2.46 | 0.47 |
| 40:L5:2049:G:H2' | 40:L5:2050:G:C8 | 2.49 | 0.47 |
| 40:L5:2375:A:H2' | 40:L5:2376:A:C8 | 2.50 | 0.47 |
| 40:L5:2651:C:O2' | 40:L5:2653:C:OP1 | 2.30 | 0.47 |
| 40:L5:2694:G:H5' | 40:L5:2695:A:C2 | 2.50 | 0.47 |
| 40:L5:2720:C:H2' | 40:L5:2721:G:O4' | 2.15 | 0.47 |
| 40:L5:4076:G:OP1 | 49:LG:73:ARG:NE | 2.48 | 0.47 |
| 40:L5:4260:U:H2' | 40:L5:4261:C:C6 | 2.50 | 0.47 |
| 40:L5:4305:G:O5' | 60:LT:83:LYS:NZ | 2.46 | 0.47 |
| 40:L5:4594:U:H2' | 40:L5:4595:G:C8 | 2.50 | 0.47 |
| 46:LD:146:LEU:HB2 | 46:LD:163:LEU:HD12 | 1.96 | 0.47 |
| 65:LZ:11:VAL:HG12 | 65:LZ:82:PRO:HA | 1.97 | 0.47 |
| 79:Ln:2:ARG:HB3 | 79:Ln:5:TRP:CD1 | 2.50 | 0.47 |
| 1:SA:159:ILE:HG12 | 12:SV:34:MET:HE1 | 1.97 | 0.47 |
| 9:SL:57:ASP:HB3 | 9:SL:60:CYS:HB2 | 1.95 | 0.47 |
| 19:S2:27:A2M:HM'3 | 19:S2:27:A2M:H1' | 1.65 | 0.47 |
| 19:S2:795:A:H2' | 19:S2:796:G:C8 | 2.49 | 0.47 |
| 19:S2:878:G:C6 | 19:S2:908:A:N1 | 2.83 | 0.47 |
| 19:S2:929:G:H2' | 19:S2:930:C:O4' | 2.15 | 0.47 |
| 20:LR:12:SER:OG | 20:LR:17:CYS:O | 2.27 | 0.47 |
| 31:SU:28:ASN:HD21 | 31:SU:31:SER:HB3 | 1.79 | 0.47 |
| 36:Sg:260:ASP:OD2 | 36:Sg:263:GLY:N | 2.41 | 0.47 |
| 40:L5:1278:C:H2' | 40:L5:1279:A:O4' | 2.15 | 0.47 |
| 40:L5:1323:A2M:HM'3 | 40:L5:1323:A2M:H1' | 1.47 | 0.47 |
| 40:L5:1389:U:OP1 | 40:L5:1497:A:O2' | 2.28 | 0.47 |
| 40:L5:1932:A:OP1 | 56:LO:49:ARG:NH2 | 2.39 | 0.47 |
| 40:L5:2098:G:H2' | 40:L5:2099:G:C8 | 2.49 | 0.47 |
| 40:L5:2869:U:O2' | 40:L5:2881:A:N7 | 2.46 | 0.47 |
| 40:L5:3861:A:H2' | 40:L5:3862:A:C8 | 2.50 | 0.47 |
| 40:L5:5004:C:H2' | 40:L5:5005:G:O4' | 2.14 | 0.47 |
| 43:LA:180:LEU:HD21 | 81:Lp:22:LEU:HB3 | 1.96 | 0.47 |
| 44:LB:17:LEU:O | 44:LB:19:ARG:N | 2.46 | 0.47 |
| 78:Lm:79:GLU:CD | 78:Lm:81:SER:HG | 2.23 | 0.47 |
| 4:SE:57:THR:OG1 | 4:SE:59:ASP:OD1 | 2.30 | 0.47 |
| 6:SH:17:ASP:HB2 | 6:SH:20:GLU:HB2 | 1.96 | 0.47 |
| 8:SJ:3:VAL:HB | 8:SJ:5:ARG:HD3 | 1.95 | 0.47 |
| 10:SN:20:ARG:HH21 | 13:SW:56:HIS:HB3 | 1.80 | 0.47 |
| 13:SW:105:THR:HB | 13:SW:126:LEU:HD11 | 1.97 | 0.47 |
| 14:SX:71:ARG:NH1 | 14:SX:82:THR:OG1 | 2.40 | 0.47 |
| 19:S2:85:A:H2' | 19:S2:86:C:H6 | 1.80 | 0.47 |
| 19:S2:409:C:H2' | 19:S2:410:G:H8 | 1.80 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:534:G:H2' | 19:S2:535:G:C8 | 2.50 | 0.47 |
| 19:S2:1566:G:N7 | 30:ST:101:ARG:NH2 | 2.63 | 0.47 |
| 35:Sf:124:ASP:OD1 | 35:Sf:124:ASP:N | 2.47 | 0.47 |
| 36:Sg:173:LEU:HD11 | 36:Sg:187:ASN:HB3 | 1.97 | 0.47 |
| 36:Sg:191:HIS:ND1 | 36:Sg:213:ASP:OD2 | 2.31 | 0.47 |
| 36:Sg:259:TRP:CD1 | 36:Sg:266:ILE:HG12 | 2.49 | 0.47 |
| 36:Sg:259:TRP:HD1 | 36:Sg:266:ILE:HG12 | 1.79 | 0.47 |
| 40:L5:1468:C:OP1 | 66:La:132:ARG:NH2 | 2.47 | 0.47 |
| 40:L5:1973:G:H2' | 40:L5:1974:U:C5 | 2.50 | 0.47 |
| 40:L5:4091:G:H2' | 40:L5:4092:G:C8 | 2.50 | 0.47 |
| 1:SA:25:LEU:O | 1:SA:164:ASN:ND2 | 2.48 | 0.46 |
| 2:SB:224:GLU:HB3 | 2:SB:227:LYS:HE3 | 1.97 | 0.46 |
| 11:SO:39:ASP:OD1 | 11:SO:40:THR:N | 2.47 | 0.46 |
| 19:S2:28:U:H2' | 19:S2:29:G:C8 | 2.49 | 0.46 |
| 19:S2:996:A:H2' | 19:S2:997:A:C8 | 2.50 | 0.46 |
| 19:S2:1226:G:O6 | 19:S2:1641:A:N6 | 2.48 | 0.46 |
| 19:S2:1524:G:N7 | 29:SS:141:ARG:NH1 | 2.63 | 0.46 |
| 19:S2:1569:A:H5' | 30:ST:41:LYS:HD3 | 1.96 | 0.46 |
| 19:S2:1657:G:H2' | 19:S2:1658:G:H8 | 1.80 | 0.46 |
| 20:LR:105:LEU:HD23 | 20:LR:138:LEU:HD23 | 1.97 | 0.46 |
| 27:SP:28:MET:HG2 | 27:SP:32:GLN:HG3 | 1.97 | 0.46 |
| 40:L5:1677:PSU:H4' | 40:L5:1680:G:C2 | 2.51 | 0.46 |
| 40:L5:1881:C:H5' | 40:L5:2281:U:H1' | 1.98 | 0.46 |
| 40:L5:2415:U:H2' | 40:L5:2416:G:C8 | 2.49 | 0.46 |
| 40:L5:2535:G:H2' | 40:L5:2536:A:H8 | 1.81 | 0.46 |
| 40:L5:3667:C:H4' | 43:LA:8:GLN:HA | 1.96 | 0.46 |
| 40:L5:3688:U:H2' | 40:L5:3689:G:H8 | 1.78 | 0.46 |
| 40:L5:3798:U:O2' | 40:L5:3800:A:N7 | 2.32 | 0.46 |
| 40:L5:3825:A2M:H2' | 40:L5:3826:C:C6 | 2.49 | 0.46 |
| 40:L5:4896:G:H2' | 40:L5:4897:G:H8 | 1.80 | 0.46 |
| 68:Lc:26:LYS:HB2 | 68:Lc:97:ILE:HB | 1.97 | 0.46 |
| 8:SJ:145:PRO:HD2 | 19:S2:522:A:H5" | 1.97 | 0.46 |
| 19:S2:21:U:H2' | 19:S2:22:A:C8 | 2.50 | 0.46 |
| 19:S2:159:A2M:H2' | 19:S2:160:U:H6 | 1.79 | 0.46 |
| 19:S2:1473:G:N1 | 19:S2:1476:A:OP2 | 2.37 | 0.46 |
| 40:L5:126:C:H2' | 40:L5:127:G:C8 | 2.50 | 0.46 |
| 40:L5:1377:G:H4' | 40:L5:1378:C:H3' | 1.97 | 0.46 |
| 40:L5:1996:C:N4 | 40:L5:2000:G:N2 | 2.62 | 0.46 |
| 40:L5:3952:A:O2' | 40:L5:3953:G:O4' | 2.30 | 0.46 |
| 40:L5:4570:G:H2' | 40:L5:4571:A2M:H8 | 1.96 | 0.46 |
| 2:SB:117:TRP:CD1 | 2:SB:153:THR:HG22 | 2.50 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:SB:204:ILE:O | 19:S2:1121:G:O2' | 2.33 | 0.46 |
| 5:SG:7:PHE:HE1 | 5:SG:9:ALA:HB3 | 1.80 | 0.46 |
| 10:SN:12:SER:OG | 19:S2:1015:U:O4 | 2.31 | 0.46 |
| 19:S2:51:U:H2' | 19:S2:52:G:C8 | 2.50 | 0.46 |
| 19:S2:218:U:H2' | 19:S2:219:U:C6 | 2.51 | 0.46 |
| 19:S2:433:A:H2' | 19:S2:434:G:C8 | 2.50 | 0.46 |
| 19:S2:602:G:H3' | 19:S2:603:C:H2' | 1.96 | 0.46 |
| 27:SP:32:GLN:HA | 27:SP:35:GLN:HG2 | 1.98 | 0.46 |
| 40:L5:1461:C:H2' | 40:L5:1462:A:H8 | 1.81 | 0.46 |
| 40:L5:4101:C:O2 | 40:L5:4107:G:N2 | 2.49 | 0.46 |
| 40:L5:4415:A:OP1 | 51:LI:154:ARG:NH2 | 2.48 | 0.46 |
| 40:L5:4508:C:H5" | 62:LV:43:LYS:HD3 | 1.97 | 0.46 |
| 40:L5:4883:C:H2' | 40:L5:4884:G:C8 | 2.51 | 0.46 |
| 44:LB:217:ILE:HD13 | 44:LB:284:ILE:HD11 | 1.97 | 0.46 |
| 46:LD:234:ASP:OD1 | 46:LD:235:MET:N | 2.48 | 0.46 |
| 52:LJ:100:SER:OG | 52:LJ:104:ASN:O | 2.34 | 0.46 |
| 80:Lo:74:GLU:OE1 | 80:Lo:77:CYS:N | 2.46 | 0.46 |
| 13:SW:86:LEU:HB3 | 13:SW:117:ARG:HH21 | 1.81 | 0.46 |
| 16:Sa:12:LYS:HG3 | 16:Sa:15:ARG:HB2 | 1.96 | 0.46 |
| 19:S2:649:PSU:H2' | 19:S2:650:A:H8 | 1.80 | 0.46 |
| 19:S2:812:A:H2' | 19:S2:813:A:H8 | 1.80 | 0.46 |
| 19:S2:1739:C:H2' | 19:S2:1740:C:H6 | 1.80 | 0.46 |
| 19:S2:1752:C:N4 | 19:S2:1754:G:N7 | 2.63 | 0.46 |
| 23:SD:45:ARG:HB2 | 23:SD:83:SER:HA | 1.96 | 0.46 |
| 40:L5:271:C:H2' | 40:L5:272:U:H6 | 1.80 | 0.46 |
| 40:L5:2063:G:H2' | 40:L5:2064:G:H8 | 1.80 | 0.46 |
| 40:L5:2497:C:H2' | 40:L5:2498:C:H6 | 1.80 | 0.46 |
| 40:L5:3825:A2M:H1' | 40:L5:3825:A2M:HM'3 | 1.52 | 0.46 |
| 40:L5:4643:G:H2' | 40:L5:4644:G:C8 | 2.51 | 0.46 |
| 46:LD:103:LEU:HG | 46:LD:247:ILE:HG21 | 1.97 | 0.46 |
| 52:LJ:90:ARG:NH2 | 52:LJ:108:GLY:O | 2.43 | 0.46 |
| 66:La:71:PRO:HG2 | 66:La:108:TYR:HA | 1.98 | 0.46 |
| 76:Lk:12:LEU:HB3 | 76:Lk:16:ARG:HH21 | 1.81 | 0.46 |
| 19:S2:96:C:H2' | 19:S2:97:U:C6 | 2.51 | 0.46 |
| 19:S2:159:A2M:H2' | 19:S2:160:U:C6 | 2.50 | 0.46 |
| 19:S2:436:OMG:OP2 | 19:S2:471:G:O2' | 2.28 | 0.46 |
| 19:S2:1334:G:OP1 | 23:SD:139:SER:OG | 2.34 | 0.46 |
| 19:S2:1454:A:C2 | 19:S2:1476:A:H1' | 2.51 | 0.46 |
| 40:L5:2007:G:H21 | 40:L5:2012:A:H62 | 1.63 | 0.46 |
| 40:L5:2353:U:H2' | 40:L5:2354:G:C8 | 2.51 | 0.46 |
| 40:L5:2722:G:H2' | 40:L5:2723:U:C6 | 2.50 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:2751:G:H2' | 40:L5:2752:G:H8 | 1.81 | 0.46 |
| 40:L5:2832:A:H2' | 40:L5:2833:A:H8 | 1.81 | 0.46 |
| 40:L5:3683:C:O2' | 43:LA:174:ARG:NH2 | 2.48 | 0.46 |
| 40:L5:4622:A:H4' | 44:LB:13:SER:HB2 | 1.98 | 0.46 |
| 40:L5:4769:G:H5' | 40:L5:4873:G:H1 | 1.80 | 0.46 |
| 41:L7:64:G:H2' | 41:L7:65:G:C8 | 2.51 | 0.46 |
| 41:L7:107:G:H2' | 41:L7:108:G:H8 | 1.81 | 0.46 |
| 42:L8:22:U:OP1 | 64:LY:11:ARG:NE | 2.45 | 0.46 |
| 51:LI:73:ASN:HB2 | 51:LI:87:MET:HE1 | 1.97 | 0.46 |
| 53:LL:140:SER:HA | 53:LL:143:GLU:HG2 | 1.96 | 0.46 |
| 83:Ls:30:VAL:HG23 | 83:Ls:189:ILE:HA | 1.97 | 0.46 |
| 2:SB:30:TRP:CE2 | 11:SO:19:PRO:HD3 | 2.51 | 0.46 |
| 6:SH:137:SER:HB3 | 6:SH:162:GLN:HE21 | 1.79 | 0.46 |
| 8:SJ:113:GLN:HG3 | 8:SJ:149:VAL:HG21 | 1.97 | 0.46 |
| 11:SO:32:HIS:CE1 | 11:SO:96:LYS:HD2 | 2.50 | 0.46 |
| 19:S2:940:U:H3 | 19:S2:1002:U:H3 | 1.63 | 0.46 |
| 19:S2:1010:G:H2' | 19:S2:1011:A:C8 | 2.50 | 0.46 |
| 19:S2:1570:G:N7 | 30:ST:97:LYS:NZ | 2.58 | 0.46 |
| 19:S2:1650:A:OP1 | 28:SQ:137:ALA:N | 2.48 | 0.46 |
| 21:LW:86:SER:OG | 21:LW:89:ASP:OD2 | 2.28 | 0.46 |
| 23:SD:106:ARG:HG2 | 23:SD:175:VAL:HG22 | 1.97 | 0.46 |
| 30:ST:18:LEU:HD22 | 30:ST:58:ALA:HA | 1.98 | 0.46 |
| 37:At:52:G:H2' | 37:At:53:G:C8 | 2.51 | 0.46 |
| 40:L5:139:G:H2' | 40:L5:140:G:H8 | 1.80 | 0.46 |
| 40:L5:965:G:N2 | 40:L5:2092:G:H1' | 2.30 | 0.46 |
| 40:L5:1199:G:H2' | 40:L5:1200:G:C8 | 2.49 | 0.46 |
| 40:L5:1636:U:H5" | 40:L5:1637:A:H5' | 1.98 | 0.46 |
| 40:L5:3727:A:O3' | 74:Li:74:LYS:NZ | 2.49 | 0.46 |
| 40:L5:4277:G:O2' | 40:L5:4282:A:N1 | 2.43 | 0.46 |
| 40:L5:4637:OMG:H2' | 40:L5:4638:U:C6 | 2.51 | 0.46 |
| 40:L5:4736:C:H2' | 40:L5:4737:G:H8 | 1.79 | 0.46 |
| 40:L5:4906:C:H2' | 40:L5:4907:G:C8 | 2.51 | 0.46 |
| 40:L5:4967:A:OP1 | 44:LB:125:SER:OG | 2.28 | 0.46 |
| 45:LC:298:ILE:HD12 | 58:LQ:35:LEU:HD21 | 1.97 | 0.46 |
| 50:LH:93:ARG:HD2 | 50:LH:143:GLU:HG2 | 1.97 | 0.46 |
| 60:LT:18:PRO:HB2 | 60:LT:21:LYS:HG3 | 1.97 | 0.46 |
| 3:SC:256:TRP:CE2 | 13:SW:68:ARG:HD3 | 2.51 | 0.46 |
| 5:SG:161:PRO:HA | 5:SG:171:THR:HA | 1.98 | 0.46 |
| 19:S2:943:U:H2' | 19:S2:944:A:H8 | 1.81 | 0.46 |
| 21:LW:72:THR:O | 21:LW:74:ARG:NH1 | 2.49 | 0.46 |
| 23:SD:175:VAL:HB | 23:SD:182:LEU:HB3 | 1.96 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 37:At:18:G:C6 | 37:At:55:U:O2 | 2.68 | 0.46 |
| 40:L5:217:C:OP2 | 40:L5:219:G:O2' | 2.23 | 0.46 |
| 40:L5:2640:G:H2' | 40:L5:2641:A:H8 | 1.81 | 0.46 |
| 40:L5:3774:A:H2' | 40:L5:3775:A:C8 | 2.50 | 0.46 |
| 40:L5:4344:U:H3 | 40:L5:4368:G:H1 | 1.63 | 0.46 |
| 40:L5:4458:C:H2' | 40:L5:4459:U:H6 | 1.81 | 0.46 |
| 45:LC:269:LYS:HA | 45:LC:269:LYS:HD2 | 1.66 | 0.46 |
| 75:Lj:20:ARG:HD2 | 75:Lj:39:TYR:CZ | 2.49 | 0.46 |
| 19:S2:528:A:H2' | 19:S2:529:A:C8 | 2.51 | 0.46 |
| 19:S2:1311:C:H2' | 19:S2:1312:G:C8 | 2.51 | 0.46 |
| 22:SR:17:ILE:HD11 | 22:SR:54:VAL:HA | 1.98 | 0.46 |
| 23:SD:80:PRO:HG2 | 23:SD:83:SER:HB3 | 1.96 | 0.46 |
| 24:SF:187:SER:HB3 | 24:SF:190:ILE:HG12 | 1.98 | 0.46 |
| 36:Sg:4:GLN:H | 36:Sg:313:THR:HB | 1.80 | 0.46 |
| 37:At:3:C:H2' | 37:At:4:U:H6 | 1.81 | 0.46 |
| 40:L5:1091:C:H2' | 40:L5:1092:G:C8 | 2.51 | 0.46 |
| 40:L5:1270:A:H8 | 40:L5:2106:G:H21 | 1.61 | 0.46 |
| 40:L5:1972:G:O2' | 84:Lt:117:ARG:NH2 | 2.49 | 0.46 |
| 40:L5:2647:A:H3' | 40:L5:2648:G:H8 | 1.80 | 0.46 |
| 40:L5:2683:C:H2' | 40:L5:2684:C:C6 | 2.51 | 0.46 |
| 40:L5:2756:G:H2' | 40:L5:2757:A:C8 | 2.51 | 0.46 |
| 40:L5:3697:U:O2' | 40:L5:3817:A:OP2 | 2.33 | 0.46 |
| 40:L5:3898:G:N2 | 44:LB:260:ALA:O | 2.35 | 0.46 |
| 40:L5:4476:C:O2' | 40:L5:4478:G:OP2 | 2.32 | 0.46 |
| 40:L5:4563:U:H2' | 40:L5:4564:A:H8 | 1.81 | 0.46 |
| 40:L5:4743:G:H2' | 40:L5:4744:A:C8 | 2.50 | 0.46 |
| 41:L7:57:C:H2' | 41:L7:58:A:C8 | 2.51 | 0.46 |
| 44:LB:57:VAL:HG22 | 44:LB:73:VAL:HG12 | 1.97 | 0.46 |
| 44:LB:220:ILE:HG23 | 44:LB:278:THR:HG22 | 1.97 | 0.46 |
| 46:LD:37:VAL:HG12 | 46:LD:50:ARG:HD3 | 1.97 | 0.46 |
| 46:LD:233:PRO:HA | 46:LD:236:MET:HG3 | 1.97 | 0.46 |
| 61:LU:44:GLN:HB2 | 61:LU:56:LEU:HD21 | 1.97 | 0.46 |
| 4:SE:134:LYS:N | 19:S2:298:G:OP1 | 2.42 | 0.46 |
| 5:SG:56:ASN:HB2 | 5:SG:108:VAL:HG22 | 1.97 | 0.46 |
| 6:SH:165:ASN:HA | 6:SH:168:HIS:HE1 | 1.81 | 0.46 |
| 7:SI:117:TYR:HB3 | 7:SI:119:LEU:HD13 | 1.96 | 0.46 |
| 19:S2:1174:PSU:H2' | 19:S2:1175:G:C8 | 2.51 | 0.46 |
| 19:S2:1499:U:H2' | 19:S2:1500:G:H8 | 1.81 | 0.46 |
| 36:Sg:168:CYS:HB2 | 36:Sg:195:LEU:HB3 | 1.97 | 0.46 |
| 38:Pt:6:C:H2' | 38:Pt:7:G:H8 | 1.81 | 0.46 |
| 40:L5:34:A:H2' | 40:L5:35:U:H6 | 1.81 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:935:A:O2' | 54:LM:44:GLN:O | 2.31 | 0.46 |
| 40:L5:1339:U:H2' | 40:L5:1340:OMC:C6 | 2.51 | 0.46 |
| 40:L5:1439:C:H4' | 48:LF:34:ARG:HH12 | 1.81 | 0.46 |
| 40:L5:1461:C:H2' | 40:L5:1462:A:C8 | 2.51 | 0.46 |
| 40:L5:1913:C:H2' | 40:L5:1914:C:C6 | 2.51 | 0.46 |
| 40:L5:2787:A2M:HM'2 | 40:L5:2787:A2M:H1' | 1.61 | 0.46 |
| 40:L5:5053:U:H3' | 40:L5:5054:C:C6 | 2.50 | 0.46 |
| 42:L8:71:A:N6 | 42:L8:83:C:O4' | 2.48 | 0.46 |
| 42:L8:78:G:H2' | 42:L8:79:G:C8 | 2.50 | 0.46 |
| 47:LE:166:LYS:HD2 | 47:LE:208:ILE:HG21 | 1.98 | 0.46 |
| 54:LM:93:LYS:HA | 54:LM:96:GLU:HB3 | 1.97 | 0.46 |
| 17:Sb:35:VAL:HG11 | 17:Sb:63:LEU:HD13 | 1.98 | 0.46 |
| 19:S2:929:G:H21 | 19:S2:1104:G:H4' | 1.81 | 0.46 |
| 19:S2:1277:C:H2' | 19:S2:1278:A:H8 | 1.80 | 0.46 |
| 19:S2:1303:C:H2' | 19:S2:1304:U:C6 | 2.50 | 0.46 |
| 19:S2:1345:G:OP1 | 19:S2:1688:C:O2' | 2.34 | 0.46 |
| 19:S2:1568:C:OP1 | 30:ST:98:SER:N | 2.42 | 0.46 |
| 19:S2:1736:G:H2' | 19:S2:1737:G:C8 | 2.50 | 0.46 |
| 24:SF:40:ALA:HB3 | 24:SF:67:PRO:HA | 1.98 | 0.46 |
| 27:SP:81:ARG:NH2 | 27:SP:117:GLY:O | 2.49 | 0.46 |
| 40:L5:7:C:H2' | 40:L5:8:U:C6 | 2.51 | 0.46 |
| 40:L5:349:A:OP1 | 45:LC:50:GLN:N | 2.46 | 0.46 |
| 40:L5:393:U:H2' | 40:L5:394:G:C8 | 2.51 | 0.46 |
| 40:L5:415:G:O6 | 42:L8:20:A:N6 | 2.49 | 0.46 |
| 40:L5:442:G:H2' | 40:L5:443:G:H8 | 1.81 | 0.46 |
| 40:L5:662:C:H2' | 40:L5:663:G:C8 | 2.51 | 0.46 |
| 40:L5:1241:C:H42 | 67:Lb:114:LYS:HE3 | 1.80 | 0.46 |
| 40:L5:1328:G:H2' | 40:L5:1329:G:C8 | 2.50 | 0.46 |
| 40:L5:2523:G:H2' | 40:L5:2524:U:C6 | 2.51 | 0.46 |
| 40:L5:4255:A:H2' | 40:L5:4256:A:C4 | 2.51 | 0.46 |
| 40:L5:4581:G:HO2' | 44:LB:92:TYR:HH | 1.58 | 0.46 |
| 41:L7:32:A:O2' | 41:L7:41:G:N7 | 2.36 | 0.46 |
| 41:L7:77:A:H62 | 41:L7:99:G:H21 | 1.64 | 0.46 |
| 41:L7:82:G:H2' | 41:L7:83:A:C8 | 2.51 | 0.46 |
| 44:LB:231:VAL:HG21 | 44:LB:251:VAL:HG23 | 1.98 | 0.46 |
| 55:LN:116:LEU:HD22 | 55:LN:135:ILE:HD11 | 1.97 | 0.46 |
| 69:Ld:36:VAL:HG21 | 69:Ld:44:ARG:HG2 | 1.97 | 0.46 |
| 70:Le:43:ASN:OD1 | 70:Le:46:ARG:N | 2.40 | 0.46 |
| 84:Lt:130:LYS:HD2 | 84:Lt:155:ILE:HD13 | 1.97 | 0.46 |
| 3:SC:180:VAL:HG23 | 3:SC:197:PRO:HG3 | 1.98 | 0.45 |
| 4:SE:48:LEU:HD12 | 4:SE:61:VAL:HG23 | 1.97 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 11:SO:136:PRO:HB3 | 19:S2:944:A:H1' | 1.97 | 0.45 |
| 19:S2:644:OMG:H2' | 19:S2:645:C:C6 | 2.51 | 0.45 |
| 19:S2:838:G:H1' | 19:S2:839:C:H3' | 1.98 | 0.45 |
| 19:S2:1098:C:H2' | 19:S2:1099:G:C8 | 2.51 | 0.45 |
| 19:S2:1221:G:H2' | 19:S2:1222:G:C8 | 2.51 | 0.45 |
| 19:S2:1382:A:H2' | 19:S2:1383:A2M:H8 | 1.98 | 0.45 |
| 19:S2:1433:C:O2 | 31:SU:19:ARG:NH2 | 2.49 | 0.45 |
| 20:LR:80:LYS:HA | 20:LR:80:LYS:HD2 | 1.77 | 0.45 |
| 40:L5:497:G:H1 | 40:L5:658:C:N4 | 2.14 | 0.45 |
| 40:L5:730:G:C4 | 48:LF:73:ARG:HD3 | 2.51 | 0.45 |
| 40:L5:1305:C:OP1 | 88:L5:5286:SPD:N1 | 2.49 | 0.45 |
| 40:L5:1471:U:H2' | 40:L5:1472:C:C6 | 2.51 | 0.45 |
| 40:L5:1472:C:H2' | 40:L5:1473:U:H6 | 1.81 | 0.45 |
| 40:L5:1669:A:H5" | 67:Lb:15:LYS:HD2 | 1.98 | 0.45 |
| 40:L5:2468:U:H2' | 40:L5:2506:G:H22 | 1.81 | 0.45 |
| 40:L5:2486:G:O6 | 40:L5:2493:G:O6 | 2.33 | 0.45 |
| 40:L5:2538:U:H2' | 40:L5:2539:C:C6 | 2.52 | 0.45 |
| 40:L5:3736:A:H2' | 40:L5:3737:A:C8 | 2.51 | 0.45 |
| 42:L8:7:U:H2' | 42:L8:8:U:C6 | 2.51 | 0.45 |
| 3:SC:232:THR:HG22 | 3:SC:235:ASN:H | 1.80 | 0.45 |
| 4:SE:124:CYS:HB3 | 4:SE:141:THR:OG1 | 2.16 | 0.45 |
| 14:SX:104:GLY:O | 19:S2:648:A:H4' | 2.15 | 0.45 |
| 15:SY:10:ARG:HA | 19:S2:839:C:H41 | 1.80 | 0.45 |
| 31:SU:31:SER:HB2 | 31:SU:107:GLU:HG3 | 1.98 | 0.45 |
| 40:L5:959:G:O2' | 40:L5:2263:A:N6 | 2.49 | 0.45 |
| 40:L5:2080:U:H2' | 40:L5:2081:C:C6 | 2.50 | 0.45 |
| 40:L5:2743:A:H2' | 40:L5:2744:A:C8 | 2.51 | 0.45 |
| 40:L5:3681:G:OP2 | 43:LA:128:ARG:NE | 2.38 | 0.45 |
| 40:L5:4080:C:H2' | 40:L5:4081:G:C8 | 2.51 | 0.45 |
| 40:L5:4389:C:H2' | 40:L5:4390:A:C8 | 2.52 | 0.45 |
| 40:L5:4523:A2M:H1' | 40:L5:4558:U:C4 | 2.50 | 0.45 |
| 40:L5:4563:U:C2 | 40:L5:4564:A:C8 | 3.04 | 0.45 |
| 42:L8:144:U:H2' | 42:L8:145:C:C6 | 2.51 | 0.45 |
| 45:LC:13:GLU:OE1 | 45:LC:161:TYR:OH | 2.30 | 0.45 |
| 52:LJ:93:GLU:HB3 | 52:LJ:175:LEU:HD11 | 1.98 | 0.45 |
| 58:LQ:155:ALA:HB3 | 58:LQ:158:THR:HG23 | 1.98 | 0.45 |
| 73:Lh:9:LEU:HB3 | 73:Lh:60:VAL:HG11 | 1.97 | 0.45 |
| 80:Lo:36:GLN:HA | 80:Lo:39:ARG:HE | 1.81 | 0.45 |
| 5:SG:103:ASP:H | 5:SG:106:LEU:HD13 | 1.81 | 0.45 |
| 19:S2:1256:G:H1 | 34:Sd:31:ILE:HG12 | 1.81 | 0.45 |
| 19:S2:1261:C:O2 | 34:Sd:10:HIS:NE2 | 2.37 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 27:SP:108:LYS:HD2 | 29:SS:117:ILE:HG22 | 1.98 | 0.45 |
| 30:ST:134:ILE:HA | 30:ST:137:GLN:HG2 | 1.96 | 0.45 |
| 31:SU:66:ARG:NH1 | 31:SU:75:LYS:HD3 | 2.29 | 0.45 |
| 35:Sf:93:HIS:CE1 | 35:Sf:96:LYS:HD3 | 2.51 | 0.45 |
| 36:Sg:109:LEU:HD12 | 36:Sg:152:SER:HA | 1.98 | 0.45 |
| 40:L5:12:A:OP1 | 88:L8:203:SPD:N10 | 2.49 | 0.45 |
| 40:L5:1195:G:H2' | 40:L5:1196:G:C8 | 2.51 | 0.45 |
| 40:L5:2283:G:H2' | 40:L5:2284:G:H8 | 1.80 | 0.45 |
| 40:L5:2624:G:O6 | 61:LU:88:LYS:NZ | 2.47 | 0.45 |
| 40:L5:2844:A:N6 | 40:L5:3839:G:O2' | 2.50 | 0.45 |
| 40:L5:3870:C:H2' | 40:L5:3871:A:C8 | 2.50 | 0.45 |
| 40:L5:3911:C:H2' | 40:L5:3912:U:H6 | 1.81 | 0.45 |
| 40:L5:3927:U:H2' | 40:L5:3928:A:C8 | 2.52 | 0.45 |
| 40:L5:4095:G:N2 | 40:L5:4099:G:H22 | 2.14 | 0.45 |
| 40:L5:4460:U:H2' | 40:L5:4461:C:H6 | 1.81 | 0.45 |
| 40:L5:4704:C:H2' | 40:L5:4705:A:C8 | 2.52 | 0.45 |
| 40:L5:4870:G:OP2 | 54:LM:5:ARG:NH1 | 2.38 | 0.45 |
| 42:L8:15:G:O2' | 42:L8:16:G:O4' | 2.20 | 0.45 |
| 56:LO:3:GLU:OE1 | 56:LO:5:GLN:NE2 | 2.37 | 0.45 |
| 84:Lt:106:PHE:HB2 | 84:Lt:109:ILE:HG12 | 1.99 | 0.45 |
| 1:SA:18:PHE:HD1 | 1:SA:173:LEU:HD21 | 1.82 | 0.45 |
| 13:SW:30:CYS:SG | 13:SW:31:SER:N | 2.89 | 0.45 |
| 15:SY:35:VAL:HG13 | 15:SY:40:ILE:HD11 | 1.97 | 0.45 |
| 19:S2:325:C:N3 | 19:S2:326:C:O2' | 2.49 | 0.45 |
| 19:S2:1688:C:H2' | 19:S2:1689:C:C6 | 2.51 | 0.45 |
| 32:SZ:72:VAL:HG13 | 32:SZ:76:ARG:HH21 | 1.80 | 0.45 |
| 40:L5:151:G:OP2 | 55:LN:4:TYR:OH | 2.24 | 0.45 |
| 40:L5:1392:A:H2' | 40:L5:1393:G:C8 | 2.50 | 0.45 |
| 40:L5:2318:G:N2 | 40:L5:2321:G:OP2 | 2.27 | 0.45 |
| 40:L5:2744:A:H2' | 40:L5:2745:A:C8 | 2.52 | 0.45 |
| 40:L5:3718:A2M:H2 | 40:L5:3934:G:O4' | 2.16 | 0.45 |
| 40:L5:3787:G:H1' | 40:L5:3789:C:H41 | 1.81 | 0.45 |
| 40:L5:4098:A:H2' | 40:L5:4099:G:H4' | 1.98 | 0.45 |
| 40:L5:4575:G:H2' | 40:L5:4576:PSU:H6 | 1.81 | 0.45 |
| 40:L5:4981:G:H3' | 40:L5:4982:A:H8 | 1.82 | 0.45 |
| 41:L7:46:C:H2' | 41:L7:47:G:H8 | 1.81 | 0.45 |
| 42:L8:130:C:H2' | 42:L8:131:G:C8 | 2.52 | 0.45 |
| 43:LA:47:ASP:OD1 | 43:LA:48:ILE:N | 2.49 | 0.45 |
| 44:LB:168:MET:HE2 | 44:LB:175:GLN:HG2 | 1.97 | 0.45 |
| 45:LC:11:TYR:CZ | 45:LC:148:PRO:HB2 | 2.52 | 0.45 |
| 68:Lc:65:MET:HE3 | 68:Lc:65:MET:HB3 | 1.81 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:SA:121:LEU:HD12 | 1:SA:121:LEU:HA | 1.86 | 0.45 |
| 2:SB:146:ARG:HH22 | 19:S2:1112:U:H1' | 1.80 | 0.45 |
| 14:SX:37:LYS:NZ | 19:S2:1810:U:O3' | 2.49 | 0.45 |
| 19:S2:57:U:O2' | 19:S2:499:G:N3 | 2.44 | 0.45 |
| 19:S2:587:A:H5' | 19:S2:592:C:H41 | 1.82 | 0.45 |
| 19:S2:1031:A2M:HM'3 | 19:S2:1031:A2M:H1' | 1.66 | 0.45 |
| 19:S2:1107:G:C6 | 19:S2:1126:G:C6 | 3.05 | 0.45 |
| 19:S2:1225:U:H2' | 19:S2:1226:G:H8 | 1.82 | 0.45 |
| 30:ST:98:SER:OG | 30:ST:101:ARG:NH2 | 2.49 | 0.45 |
| 40:L5:418:A:C2 | 42:L8:17:A:H1' | 2.51 | 0.45 |
| 40:L5:1569:U:H2' | 40:L5:1570:G:C8 | 2.51 | 0.45 |
| 40:L5:2376:A:H2' | 40:L5:2377:C:C6 | 2.51 | 0.45 |
| 40:L5:3841:OMC:HM23 | 40:L5:3841:OMC:H1' | 1.80 | 0.45 |
| 43:LA:145:LYS:HD3 | 43:LA:145:LYS:HA | 1.76 | 0.45 |
| 48:LF:80:ASN:HB3 | 60:LT:142:ARG:HA | 1.99 | 0.45 |
| 61:LU:60:VAL:HG13 | 61:LU:61:VAL:HG23 | 1.99 | 0.45 |
| 65:LZ:42:LEU:HD21 | 65:LZ:96:VAL:HG12 | 1.97 | 0.45 |
| 1:SA:5:LEU:HB2 | 1:SA:8:LEU:HB2 | 1.99 | 0.45 |
| 10:SN:69:ASN:ND2 | 19:S2:916:A:N7 | 2.64 | 0.45 |
| 19:S2:102:A:H4' | 19:S2:104:A:C8 | 2.51 | 0.45 |
| 19:S2:1039:C:H2' | 19:S2:1040:G:C8 | 2.52 | 0.45 |
| 19:S2:1545:A:N3 | 19:S2:1671:G:O2' | 2.36 | 0.45 |
| 20:LR:160:GLU:OE1 | 20:LR:163:ARG:NH1 | 2.48 | 0.45 |
| 30:ST:77:LYS:HA | 30:ST:94:ARG:HG2 | 1.99 | 0.45 |
| 33:Sc:20:ARG:HD3 | 33:Sc:28:THR:HG22 | 1.98 | 0.45 |
| 40:L5:951:G:H5' | 71:Lf:109:ARG:HD3 | 1.98 | 0.45 |
| 40:L5:1345:A:H2' | 40:L5:1346:C:C6 | 2.52 | 0.45 |
| 40:L5:3606:U:H2' | 40:L5:3607:U:C6 | 2.52 | 0.45 |
| 40:L5:3700:C:H2' | 40:L5:3746:A:H61 | 1.82 | 0.45 |
| 40:L5:3825:A2M:H2' | 40:L5:3826:C:H6 | 1.82 | 0.45 |
| 40:L5:3848:U:H2' | 40:L5:3849:A:C8 | 2.51 | 0.45 |
| 40:L5:4122:G:O2' | 65:LZ:136:PHE:OXT | 2.32 | 0.45 |
| 40:L5:4147:G:H2' | 40:L5:4148:C:C6 | 2.52 | 0.45 |
| 40:L5:4475:G:P | 50:LH:173:ARG:HH12 | 2.40 | 0.45 |
| 40:L5:4637:OMG:HM23 | 40:L5:4637:OMG:H1' | 1.66 | 0.45 |
| 49:LG:90:GLN:OE1 | 49:LG:94:GLN:NE2 | 2.49 | 0.45 |
| 3:SC:191:VAL:HG11 | 3:SC:236:PHE:HA | 1.98 | 0.45 |
| 11:SO:29:GLY:O | 11:SO:94:HIS:N | 2.49 | 0.45 |
| 16:Sa:2:THR:HG22 | 19:S2:1199:A:H5" | 1.98 | 0.45 |
| 19:S2:194:C:H2' | 19:S2:195:C:H6 | 1.81 | 0.45 |
| 19:S2:1192:U:H2' | 19:S2:1193:U:C6 | 2.51 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1490:OMG:HM23 | 19:S2:1490:OMG:H1' | 1.79 | 0.45 |
| 36:Sg:126:ASP:OD2 | 36:Sg:130:LYS:NZ | 2.50 | 0.45 |
| 40:L5:138:G:H2' | 40:L5:139:G:H8 | 1.81 | 0.45 |
| 40:L5:502:C:H3' | 40:L5:503:C:H3' | 1.98 | 0.45 |
| 40:L5:1284:G:H21 | 47:LE:130:LYS:HG3 | 1.82 | 0.45 |
| 40:L5:2422:OMC:HM23 | 40:L5:2422:OMC:H1' | 1.70 | 0.45 |
| 40:L5:2895:A:H2' | 40:L5:2896:G:C8 | 2.52 | 0.45 |
| 40:L5:4493:PSU:H2' | 40:L5:4494:OMG:H8 | 1.81 | 0.45 |
| 47:LE:178:PRO:HB2 | 47:LE:181:LEU:HG | 1.98 | 0.45 |
| 53:LL:150:LEU:HD23 | 53:LL:154:VAL:HG22 | 1.98 | 0.45 |
| 68:Lc:47:ILE:HG12 | 68:Lc:72:HIS:HB3 | 1.99 | 0.45 |
| 5:SG:172:LYS:HD3 | 19:S2:65:C:H4' | 1.99 | 0.45 |
| 8:SJ:25:LEU:HD13 | 19:S2:640:A:H5" | 1.98 | 0.45 |
| 19:S2:689:U:H2' | 19:S2:690:G:O4' | 2.17 | 0.45 |
| 19:S2:825:A:H2' | 19:S2:826:A:C8 | 2.52 | 0.45 |
| 19:S2:1630:A:OP1 | 29:SS:40:TYR:N | 2.39 | 0.45 |
| 19:S2:1667:U:H2' | 19:S2:1668:U:C6 | 2.51 | 0.45 |
| 19:S2:1679:A:H2' | 24:SF:60:ARG:HD2 | 1.98 | 0.45 |
| 21:LW:5:LEU:HD12 | 21:LW:30:GLN:NE2 | 2.32 | 0.45 |
| 23:SD:126:ILE:O | 23:SD:129:SER:OG | 2.33 | 0.45 |
| 36:Sg:68:ASP:OD2 | 36:Sg:155:ARG:NH2 | 2.50 | 0.45 |
| 40:L5:303:C:OP2 | 55:LN:68:ARG:NH2 | 2.34 | 0.45 |
| 40:L5:423:G:H2' | 40:L5:424:U:C6 | 2.52 | 0.45 |
| 40:L5:455:C:O2' | 40:L5:456:C:H5' | 2.17 | 0.45 |
| 40:L5:742:G:H2' | 40:L5:743:G:H8 | 1.82 | 0.45 |
| 40:L5:1338:G:H4' | 40:L5:1339:U:H6 | 1.81 | 0.45 |
| 40:L5:1800:U:H2' | 40:L5:1801:A:C8 | 2.52 | 0.45 |
| 40:L5:2351:OMC:HM23 | 40:L5:2351:OMC:H1' | 1.75 | 0.45 |
| 40:L5:2610:G:H2' | 40:L5:2611:A:C8 | 2.52 | 0.45 |
| 40:L5:3816:A:OP1 | 40:L5:3818:UY1:N1 | 2.50 | 0.45 |
| 40:L5:3839:G:N2 | 40:L5:3843:C:O2' | 2.50 | 0.45 |
| 40:L5:3910:C:H2' | 40:L5:3911:C:H6 | 1.82 | 0.45 |
| 42:L8:9:A:H2' | 42:L8:10:G:H8 | 1.81 | 0.45 |
| 46:LD:211:LEU:HB3 | 46:LD:219:TYR:HB2 | 1.98 | 0.45 |
| 2:SB:65:ARG:HB3 | 11:SO:48:SER:HB2 | 1.98 | 0.45 |
| 9:SL:7:GLU:HG2 | 9:SL:9:ALA:H | 1.81 | 0.45 |
| 13:SW:11:LEU:HA | 13:SW:11:LEU:HD23 | 1.76 | 0.45 |
| 19:S2:511:U:H2' | 19:S2:512:A:H8 | 1.82 | 0.45 |
| 19:S2:809:A:H2' | 19:S2:810:A:O4' | 2.16 | 0.45 |
| 19:S2:974:C:H2' | 19:S2:975:G:C8 | 2.52 | 0.45 |
| 19:S2:1092:G:H2' | 19:S2:1093:A:H8 | 1.82 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1373:C:H2' | 19:S2:1374:C:H6 | 1.82 | 0.45 |
| 24:SF:67:PRO:HG2 | 24:SF:70:GLU:HB3 | 1.98 | 0.45 |
| 29:SS:80:PRO:HG2 | 30:ST:36:THR:HG21 | 1.98 | 0.45 |
| 37:At:1:G:H2' | 37:At:2:U:H6 | 1.82 | 0.45 |
| 40:L5:432:U:H1' | 87:L5:5292:SPM:H61 | 1.98 | 0.45 |
| 40:L5:462:G:H2' | 40:L5:463:A:C8 | 2.52 | 0.45 |
| 40:L5:716:C:OP1 | 45:LC:317:ASN:HB2 | 2.17 | 0.45 |
| 40:L5:1335:G:N2 | 45:LC:95:MET:HB2 | 2.32 | 0.45 |
| 40:L5:1536:PSU:O4 | 40:L5:1635:C:O2' | 2.31 | 0.45 |
| 40:L5:1972:G:C6 | 40:L5:1973:G:C6 | 3.04 | 0.45 |
| 40:L5:2764:A:H2' | 40:L5:2765:A:C8 | 2.52 | 0.45 |
| 40:L5:3736:A:H2' | 40:L5:3737:A:H8 | 1.82 | 0.45 |
| 40:L5:3834:C:H2' | 40:L5:3835:C:H6 | 1.82 | 0.45 |
| 40:L5:4113:U:H4' | 40:L5:4115:G:C4 | 2.52 | 0.45 |
| 40:L5:4389:C:H2' | 40:L5:4390:A:H8 | 1.82 | 0.45 |
| 40:L5:4601:U:C2 | 40:L5:4610:A:N6 | 2.84 | 0.45 |
| 42:L8:36:G:C5 | 73:Lh:89:ARG:HD3 | 2.52 | 0.45 |
| 73:Lh:89:ARG:O | 73:Lh:93:ARG:HG2 | 2.17 | 0.45 |
| 1:SA:120:ARG:HD2 | 3:SC:266:TYR:HB3 | 1.99 | 0.45 |
| 4:SE:144:ALA:HB3 | 19:S2:121:OMU:HM23 | 1.99 | 0.45 |
| 11:SO:32:HIS:CG | 19:S2:975:G:H4' | 2.52 | 0.45 |
| 11:SO:62:VAL:HG22 | 11:SO:64:ALA:H | 1.82 | 0.45 |
| 19:S2:194:C:H2' | 19:S2:195:C:C6 | 2.52 | 0.45 |
| 19:S2:564:A:H2' | 19:S2:565:G:O4' | 2.17 | 0.45 |
| 19:S2:1109:C:O2 | 22:SR:125:GLY:N | 2.44 | 0.45 |
| 19:S2:1610:G:O2' | 29:SS:86:ARG:NH1 | 2.50 | 0.45 |
| 19:S2:1828:C:H2' | 19:S2:1829:G:H8 | 1.81 | 0.45 |
| 31:SU:20:ILE:HG13 | 31:SU:116:ILE:HG22 | 1.99 | 0.45 |
| 40:L5:123:C:H2' | 40:L5:124:C:H6 | 1.82 | 0.45 |
| 40:L5:230:G:OP1 | 64:LY:15:ARG:NH1 | 2.46 | 0.45 |
| 40:L5:307:A:N3 | 40:L5:310:G:O2' | 2.49 | 0.45 |
| 40:L5:4571:A2M:HM'3 | 40:L5:4571:A2M:H1' | 1.68 | 0.45 |
| 40:L5:4727:A:H2' | 40:L5:4728:U:O4' | 2.16 | 0.45 |
| 52:LJ:97:ASN:ND2 | 52:LJ:177:GLY:O | 2.50 | 0.45 |
| 56:LO:34:VAL:HG22 | 56:LO:103:LYS:HB2 | 1.99 | 0.45 |
| 6:SH:73:GLN:HA | 6:SH:76:GLN:HB2 | 1.99 | 0.44 |
| 19:S2:130:G:O2' | 19:S2:131:C:O3' | 2.35 | 0.44 |
| 19:S2:517:OMC:HM23 | 19:S2:517:OMC:H1' | 1.81 | 0.44 |
| 19:S2:1620:A:H1' | 19:S2:1624:U:OP2 | 2.17 | 0.44 |
| 19:S2:1713:C:H2' | 19:S2:1714:U:H6 | 1.81 | 0.44 |
| 29:SS:51:ASP:HB3 | 29:SS:54:LYS:HE3 | 1.99 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 36:Sg:31:ILE:HG12 | 36:Sg:45:LEU:HD21 | 1.98 | 0.44 |
| 40:L5:267:G:H2' | 40:L5:268:G:C8 | 2.52 | 0.44 |
| 40:L5:2112:G:O2' | 40:L5:2250:C:N4 | 2.50 | 0.44 |
| 40:L5:2424:OMG:HM23 | 40:L5:2424:OMG:H1' | 1.79 | 0.44 |
| 40:L5:4138:C:H3' | 40:L5:4139:G:H8 | 1.82 | 0.44 |
| 40:L5:4569:U:OP1 | 44:LB:21:ARG:NH1 | 2.50 | 0.44 |
| 40:L5:4743:G:H2' | 40:L5:4744:A:H8 | 1.82 | 0.44 |
| 40:L5:4770:U:H2' | 40:L5:4771:C:C6 | 2.51 | 0.44 |
| 40:L5:4935:C:H2' | 40:L5:4936:G:C8 | 2.52 | 0.44 |
| 44:LB:217:ILE:HD11 | 44:LB:333:LEU:HD21 | 1.98 | 0.44 |
| 50:LH:41:ILE:HG22 | 50:LH:43:VAL:HG13 | 1.98 | 0.44 |
| 53:LL:182:LEU:HD11 | 66:La:146:LEU:HD21 | 1.98 | 0.44 |
| 57:LP:95:LEU:HD23 | 57:LP:95:LEU:HA | 1.85 | 0.44 |
| 71:Lf:40:GLU:O | 71:Lf:109:ARG:NH2 | 2.43 | 0.44 |
| 72:Lg:33:LEU:HD23 | 72:Lg:33:LEU:HA | 1.84 | 0.44 |
| 84:Lt:83:LYS:HD2 | 84:Lt:86:LYS:HE2 | 1.99 | 0.44 |
| 3:SC:74:LYS:HD3 | 3:SC:74:LYS:HA | 1.71 | 0.44 |
| 4:SE:139:LEU:HB2 | 4:SE:150:PRO:HG3 | 2.00 | 0.44 |
| 19:S2:804:U:H2' | 19:S2:805:U:C6 | 2.51 | 0.44 |
| 19:S2:867:OMG:H3' | 19:S2:868:G:H21 | 1.81 | 0.44 |
| 19:S2:924:G:H1 | 19:S2:1018:U:H3 | 1.64 | 0.44 |
| 19:S2:1064:C:H2' | 19:S2:1065:G:H8 | 1.83 | 0.44 |
| 19:S2:1093:A:H2' | 19:S2:1094:C:H6 | 1.82 | 0.44 |
| 19:S2:1388:A:H61 | 23:SD:161:GLY:HA3 | 1.82 | 0.44 |
| 19:S2:1673:U:O2' | 24:SF:84:GLY:O | 2.28 | 0.44 |
| 23:SD:131:ALA:HA | 23:SD:191:PRO:HD3 | 1.99 | 0.44 |
| 30:ST:64:LEU:HD12 | 30:ST:122:LYS:HA | 1.99 | 0.44 |
| 37:At:9:A:O2' | 37:At:10:G:N7 | 2.46 | 0.44 |
| 37:At:56:C:H2' | 37:At:57:G:C8 | 2.52 | 0.44 |
| 40:L5:106:A:H1' | 40:L5:336:A:N3 | 2.33 | 0.44 |
| 40:L5:713:C:H2' | 40:L5:714:G:C8 | 2.52 | 0.44 |
| 40:L5:1270:A:H2' | 40:L5:2107:C:O2 | 2.18 | 0.44 |
| 40:L5:1367:C:O2' | 40:L5:1369:C:OP2 | 2.36 | 0.44 |
| 40:L5:1424:G:O6 | 40:L5:1462:A:N6 | 2.50 | 0.44 |
| 40:L5:1431:C:H2' | 40:L5:1432:G:O4' | 2.17 | 0.44 |
| 40:L5:1656:U:OP2 | 66:La:26:ARG:NH2 | 2.37 | 0.44 |
| 40:L5:1777:C:H2' | 40:L5:1778:C:C6 | 2.52 | 0.44 |
| 40:L5:1800:U:H2' | 40:L5:1801:A:H8 | 1.82 | 0.44 |
| 40:L5:1876:U:H2' | 40:L5:1877:G:H8 | 1.82 | 0.44 |
| 40:L5:2406:G:H4' | 77:Ll:48:LYS:HE3 | 1.99 | 0.44 |
| 40:L5:2508:U:H2' | 40:L5:2509:C:H6 | 1.83 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:4071:U:H2' | 40:L5:4072:C:C6 | 2.53 | 0.44 |
| 40:L5:4178:A:H2' | 40:L5:4179:G:C8 | 2.52 | 0.44 |
| 40:L5:4336:A:H5" | 40:L5:4337:C:H5' | 1.99 | 0.44 |
| 40:L5:4715:C:OP2 | 44:LB:31:SER:OG | 2.35 | 0.44 |
| 40:L5:4754:G:N1 | 40:L5:4880:C:N3 | 2.65 | 0.44 |
| 40:L5:4767:C:H2' | 40:L5:4768:G:H8 | 1.82 | 0.44 |
| 40:L5:4980:C:H3' | 40:L5:4981:G:H21 | 1.82 | 0.44 |
| 70:Le:66:THR:HA | 70:Le:69:MET:HE3 | 1.99 | 0.44 |
| 84:Lt:61:LYS:HB3 | 84:Lt:74:VAL:HG13 | 1.99 | 0.44 |
| 4:SE:106:LYS:HD2 | 4:SE:108:ARG:NH2 | 2.33 | 0.44 |
| 9:SL:80:MET:HA | 9:SL:86:ILE:HG22 | 1.99 | 0.44 |
| 19:S2:224:A:H2' | 19:S2:225:G:C8 | 2.52 | 0.44 |
| 19:S2:382:C:H2' | 19:S2:383:G:C8 | 2.53 | 0.44 |
| 19:S2:494:C:N4 | 19:S2:509:OMG:HN22 | 2.15 | 0.44 |
| 19:S2:516:A:N1 | 19:S2:643:A:O2' | 2.42 | 0.44 |
| 19:S2:835:C:H5' | 19:S2:836:G:C8 | 2.52 | 0.44 |
| 19:S2:909:G:H2' | 19:S2:910:G:C8 | 2.52 | 0.44 |
| 19:S2:1109:C:C4 | 22:SR:126:MET:HE2 | 2.52 | 0.44 |
| 19:S2:1227:G:C2 | 19:S2:1228:A:C8 | 3.06 | 0.44 |
| 19:S2:1585:U:O2 | 28:SQ:73:LYS:NZ | 2.39 | 0.44 |
| 19:S2:1801:A:H2' | 19:S2:1802:C:C6 | 2.52 | 0.44 |
| 19:S2:1828:C:H2' | 19:S2:1829:G:C8 | 2.51 | 0.44 |
| 35:Sf:132:MET:HE2 | 35:Sf:139:HIS:HB3 | 1.99 | 0.44 |
| 37:At:51:C:H2' | 37:At:52:G:H8 | 1.82 | 0.44 |
| 40:L5:395:A:H2' | 40:L5:396:A:C8 | 2.53 | 0.44 |
| 40:L5:928:C:H2' | 40:L5:929:A:C8 | 2.52 | 0.44 |
| 40:L5:1355:G:P | 58:LQ:108:ARG:HH22 | 2.41 | 0.44 |
| 40:L5:1553:A:O2' | 81:Lp:9:GLY:O | 2.32 | 0.44 |
| 40:L5:1830:G:H2' | 40:L5:1831:G:C8 | 2.53 | 0.44 |
| 40:L5:2108:G:H2' | 40:L5:2109:G:C8 | 2.53 | 0.44 |
| 40:L5:2610:G:H2' | 40:L5:2611:A:H8 | 1.83 | 0.44 |
| 40:L5:3951:G:O2' | 40:L5:3952:A:OP1 | 2.36 | 0.44 |
| 40:L5:4196:OMG:HM23 | 40:L5:4196:OMG:H1' | 1.84 | 0.44 |
| 40:L5:4600:G:H4' | 40:L5:4601:U:O5' | 2.16 | 0.44 |
| 40:L5:4870:G:H2' | 54:LM:91:TRP:CZ2 | 2.53 | 0.44 |
| 57:LP:107:LEU:HB2 | 57:LP:152:GLU:OE2 | 2.17 | 0.44 |
| 59:LS:30:MET:HB3 | 59:LS:30:MET:HE2 | 1.85 | 0.44 |
| 73:Lh:80:PRO:HD2 | 73:Lh:83:LEU:HD12 | 1.98 | 0.44 |
| 19:S2:60:A:N3 | 19:S2:316:G:O2' | 2.39 | 0.44 |
| 19:S2:927:C:H2' | 19:S2:928:G:H8 | 1.82 | 0.44 |
| 19:S2:929:G:N2 | 19:S2:1104:G:H4' | 2.32 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:986:G:OP2 | 19:S2:988:C:N4 | 2.50 | 0.44 |
| 19:S2:1096:G:N2 | 19:S2:1136:U:O2 | 2.36 | 0.44 |
| 19:S2:1201:U:H2' | 19:S2:1202:U:C6 | 2.52 | 0.44 |
| 19:S2:1393:G:H2' | 19:S2:1394:G:C8 | 2.52 | 0.44 |
| 19:S2:1597:C:OP2 | 32:SZ:85:ARG:NH1 | 2.35 | 0.44 |
| 19:S2:1801:A:H2' | 19:S2:1802:C:H6 | 1.82 | 0.44 |
| 36:Sg:205:SER:C | 36:Sg:221:LEU:HD23 | 2.43 | 0.44 |
| 40:L5:35:U:H4' | 40:L5:1525:A:C2 | 2.52 | 0.44 |
| 40:L5:321:U:H2' | 40:L5:322:C:C6 | 2.52 | 0.44 |
| 40:L5:1700:G:H5' | 40:L5:1702:C:OP2 | 2.18 | 0.44 |
| 40:L5:1878:G:H2' | 40:L5:1879:C:C6 | 2.52 | 0.44 |
| 40:L5:2693:G:H2' | 40:L5:2694:G:C2 | 2.52 | 0.44 |
| 40:L5:2857:A:H2' | 40:L5:2858:A:O4' | 2.16 | 0.44 |
| 40:L5:3607:U:H2' | 40:L5:3608:A:H8 | 1.81 | 0.44 |
| 40:L5:3729:U:H2' | 40:L5:3730:U:C6 | 2.52 | 0.44 |
| 40:L5:3731:C:OP1 | 80:Lo:30:LYS:NZ | 2.50 | 0.44 |
| 40:L5:3947:A:C6 | 40:L5:4068:U:H1' | 2.52 | 0.44 |
| 40:L5:4723:A:H2' | 40:L5:4724:A:C8 | 2.51 | 0.44 |
| 42:L8:25:G:H2' | 42:L8:26:C:C6 | 2.53 | 0.44 |
| 43:LA:131:GLY:H | 43:LA:169:VAL:HG13 | 1.83 | 0.44 |
| 51:LI:96:VAL:HG22 | 51:LI:125:THR:HG22 | 1.99 | 0.44 |
| 57:LP:39:MET:HG2 | 57:LP:43:LYS:HD3 | 2.00 | 0.44 |
| 19:S2:106:C:H2' | 19:S2:107:A:C8 | 2.41 | 0.44 |
| 19:S2:525:A:H2' | 19:S2:526:A:C8 | 2.51 | 0.44 |
| 19:S2:1093:A:H2' | 19:S2:1094:C:C6 | 2.52 | 0.44 |
| 19:S2:1236:G:H2' | 19:S2:1237:C:C6 | 2.53 | 0.44 |
| 19:S2:1271:C:O2 | 34:Sd:2:GLY:N | 2.50 | 0.44 |
| 19:S2:1522:A:OP2 | 29:SS:144:ARG:NE | 2.51 | 0.44 |
| 27:SP:20:VAL:HG11 | 27:SP:36:LEU:HD21 | 1.98 | 0.44 |
| 36:Sg:16:GLY:HA3 | 36:Sg:36:ARG:HB2 | 1.98 | 0.44 |
| 40:L5:251:C:H2' | 40:L5:252:C:C6 | 2.53 | 0.44 |
| 40:L5:456:C:N4 | 40:L5:701:G:O6 | 2.50 | 0.44 |
| 40:L5:1700:G:H5" | 40:L5:1704:C:N4 | 2.31 | 0.44 |
| 40:L5:1730:U:H2' | 40:L5:1731:C:C6 | 2.53 | 0.44 |
| 40:L5:3667:C:H2' | 40:L5:3668:C:H6 | 1.83 | 0.44 |
| 45:LC:340:ILE:HD13 | 47:LE:51:VAL:HG21 | 1.99 | 0.44 |
| 50:LH:103:VAL:HG11 | 50:LH:144:LEU:HD21 | 2.00 | 0.44 |
| 1:SA:67:ALA:HB1 | 12:SV:35:ASN:HB2 | 1.99 | 0.44 |
| 2:SB:117:TRP:HD1 | 2:SB:153:THR:HG22 | 1.83 | 0.44 |
| 11:SO:129:ILE:HG13 | 16:Sa:65:PRO:HG2 | 2.00 | 0.44 |
| 19:S2:89:C:H2' | 19:S2:90:G:C8 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:429:C:H2' | 19:S2:430:C:C6 | 2.53 | 0.44 |
| 20:LR:10:LEU:HD22 | 20:LR:38:ARG:HG2 | 1.99 | 0.44 |
| 23:SD:60:GLY:HA3 | 23:SD:65:ARG:H | 1.83 | 0.44 |
| 29:SS:66:ARG:O | 29:SS:70:ILE:HG12 | 2.18 | 0.44 |
| 36:Sg:272:GLN:OE1 | 36:Sg:308:ARG:NH1 | 2.51 | 0.44 |
| 38:Pt:58:A:O2' | 38:Pt:61:C:N4 | 2.50 | 0.44 |
| 40:L5:153:G:H2' | 40:L5:154:G:H8 | 1.82 | 0.44 |
| 40:L5:286:U:H2' | 40:L5:287:U:C6 | 2.53 | 0.44 |
| 40:L5:492:U:H2' | 40:L5:493:G:O4' | 2.17 | 0.44 |
| 40:L5:1350:C:H2' | 40:L5:1351:G:C8 | 2.52 | 0.44 |
| 40:L5:1503:A:H4' | 40:L5:1504:G:H5' | 2.00 | 0.44 |
| 40:L5:1996:C:N3 | 40:L5:2000:G:N1 | 2.62 | 0.44 |
| 42:L8:90:C:H2' | 42:L8:91:A:H8 | 1.81 | 0.44 |
| 44:LB:288:GLY:HA3 | 44:LB:330:PHE:CE1 | 2.52 | 0.44 |
| 60:LT:75:VAL:HG22 | 60:LT:88:ARG:HG2 | 1.99 | 0.44 |
| 82:Lr:73:PRO:HA | 82:Lr:76:SER:HB2 | 1.98 | 0.44 |
| 1:SA:149:ASN:N | 1:SA:152:SER:OG | 2.48 | 0.44 |
| 5:SG:67:VAL:HG12 | 5:SG:69:THR:HG22 | 2.00 | 0.44 |
| 7:SI:61:ASP:O | 7:SI:78:ILE:N | 2.32 | 0.44 |
| 19:S2:160:U:O4 | 19:S2:468:A2M:H4' | 2.17 | 0.44 |
| 19:S2:368:U:H3' | 19:S2:369:C:H2' | 1.98 | 0.44 |
| 19:S2:409:C:H2' | 19:S2:410:G:C8 | 2.52 | 0.44 |
| 19:S2:1482:C:O2' | 23:SD:161:GLY:N | 2.48 | 0.44 |
| 19:S2:1488:C:H3' | 19:S2:1489:A:H4' | 1.99 | 0.44 |
| 19:S2:1566:G:N2 | 19:S2:1569:A:OP2 | 2.40 | 0.44 |
| 19:S2:1657:G:H2' | 19:S2:1658:G:C8 | 2.52 | 0.44 |
| 36:Sg:191:HIS:NE2 | 36:Sg:209:SER:OG | 2.51 | 0.44 |
| 36:Sg:256:ILE:HB | 36:Sg:270:LEU:HB2 | 1.99 | 0.44 |
| 40:L5:978:G:H2' | 40:L5:979:C:C6 | 2.52 | 0.44 |
| 40:L5:1249:C:H2' | 40:L5:1250:C:H6 | 1.83 | 0.44 |
| 40:L5:1666:C:H2' | 40:L5:1667:G:O4' | 2.18 | 0.44 |
| 40:L5:2476:G:H2' | 40:L5:2477:A:C8 | 2.53 | 0.44 |
| 40:L5:4460:U:H2' | 40:L5:4461:C:C6 | 2.53 | 0.44 |
| 43:LA:137:ILE:HD11 | 43:LA:149:LYS:HB2 | 2.00 | 0.44 |
| 55:LN:113:LEU:HB2 | 55:LN:134:LEU:HD12 | 1.99 | 0.44 |
| 63:LX:73:HIS:HD2 | 63:LX:115:LYS:HE2 | 1.82 | 0.44 |
| 80:Lo:70:LEU:HD12 | 80:Lo:81:ARG:HB3 | 2.00 | 0.44 |
| 7:SI:116:HIS:CD2 | 7:SI:152:ARG:HH21 | 2.36 | 0.44 |
| 8:SJ:84:ILE:O | 8:SJ:108:ARG:NE | 2.51 | 0.44 |
| 10:SN:47:PRO:HA | 10:SN:50:ILE:HD12 | 1.99 | 0.44 |
| 11:SO:35:ALA:O | 11:SO:109:GLY:N | 2.40 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 18:Se:45:VAL:HG12 | 18:Se:47:PRO:HD3 | 2.00 | 0.44 |
| 19:S2:549:C:N3 | 19:S2:550:C:N4 | 2.64 | 0.44 |
| 19:S2:634:A:H2' | 19:S2:635:G:H8 | 1.83 | 0.44 |
| 19:S2:878:G:N1 | 19:S2:908:A:C2 | 2.68 | 0.44 |
| 19:S2:1004:PSU:H2' | 19:S2:1005:G:C8 | 2.51 | 0.44 |
| 19:S2:1337:4AC:O5' | 19:S2:1337:4AC:H6 | 2.18 | 0.44 |
| 19:S2:1689:C:H2' | 19:S2:1690:U:C6 | 2.51 | 0.44 |
| 26:SM:91:LEU:HD12 | 26:SM:106:CYS:HB2 | 1.99 | 0.44 |
| 36:Sg:153:CYS:SG | 36:Sg:198:VAL:HG12 | 2.58 | 0.44 |
| 36:Sg:156:PHE:HA | 36:Sg:165:ILE:HD12 | 2.00 | 0.44 |
| 38:Pt:52:G:H2' | 38:Pt:53:G:H8 | 1.83 | 0.44 |
| 40:L5:1238:A:H5" | 47:LE:60:SER:HB3 | 2.00 | 0.44 |
| 40:L5:1375:C:OP1 | 45:LC:121:ARG:NE | 2.40 | 0.44 |
| 40:L5:1517:G:H1 | 45:LC:104:PRO:HD2 | 1.83 | 0.44 |
| 40:L5:1840:G:H2' | 40:L5:1841:C:C6 | 2.53 | 0.44 |
| 40:L5:1942:A:H4' | 41:L7:88:A:C6 | 2.52 | 0.44 |
| 40:L5:2063:G:H2' | 40:L5:2064:G:C8 | 2.53 | 0.44 |
| 40:L5:2274:C:H5" | 45:LC:312:ARG:HB3 | 1.99 | 0.44 |
| 40:L5:2333:G:H5" | 45:LC:195:LYS:HE3 | 2.00 | 0.44 |
| 40:L5:2372:U:H2' | 40:L5:2373:C:C6 | 2.53 | 0.44 |
| 40:L5:2787:A2M:C8 | 40:L5:2801:U:H3 | 2.31 | 0.44 |
| 40:L5:5014:A:H2' | 40:L5:5015:G:O4' | 2.17 | 0.44 |
| 44:LB:240:LEU:HB2 | 44:LB:248:LEU:HA | 1.98 | 0.44 |
| 47:LE:131:LYS:O | 47:LE:136:HIS:NE2 | 2.50 | 0.44 |
| 5:SG:46:LYS:HD3 | 5:SG:46:LYS:HA | 1.86 | 0.44 |
| 8:SJ:2:PRO:O | 19:S2:509:OMG:H5" | 2.18 | 0.44 |
| 11:SO:94:HIS:CE1 | 11:SO:128:ARG:H | 2.35 | 0.44 |
| 14:SX:52:LEU:HD11 | 14:SX:73:GLN:HB2 | 1.99 | 0.44 |
| 19:S2:595:U:H2' | 19:S2:596:U:C6 | 2.53 | 0.44 |
| 19:S2:888:U:H4' | 19:S2:889:U:H5' | 1.98 | 0.44 |
| 23:SD:23:GLU:HG2 | 25:SK:64:TRP:HE1 | 1.82 | 0.44 |
| 32:SZ:102:LYS:HA | 32:SZ:102:LYS:HD3 | 1.85 | 0.44 |
| 40:L5:267:G:H2' | 40:L5:268:G:H8 | 1.82 | 0.44 |
| 40:L5:376:A:H3' | 40:L5:377:A:H8 | 1.82 | 0.44 |
| 40:L5:1198:G:H2' | 40:L5:1199:G:C8 | 2.53 | 0.44 |
| 40:L5:2295:C:O2' | 45:LC:45:ARG:NH2 | 2.50 | 0.44 |
| 40:L5:2801:U:O2' | 75:Lj:12:ARG:NH1 | 2.50 | 0.44 |
| 40:L5:3777:G:H22 | 40:L5:3816:A:P | 2.41 | 0.44 |
| 40:L5:4392:OMG:HM23 | 40:L5:4392:OMG:H1' | 1.84 | 0.44 |
| 40:L5:4688:C:H2' | 40:L5:4689:PSU:C6 | 2.53 | 0.44 |
| 51:LI:91:LEU:HD23 | 51:LI:91:LEU:HA | 1.88 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 52:LJ:96:LYS:HB2 | 52:LJ:163:MET:HE2 | 2.00 | 0.44 |
| 57:LP:118:GLN:HE21 | 57:LP:120:ASN:ND2 | 2.13 | 0.44 |
| 62:LV:106:VAL:HG12 | 62:LV:112:MET:HA | 1.99 | 0.44 |
| 13:SW:36:ARG:HA | 13:SW:36:ARG:HD2 | 1.77 | 0.43 |
| 19:S2:1795:G:H2' | 19:S2:1796:G:H8 | 1.83 | 0.43 |
| 23:SD:71:ALA:HB3 | 25:SK:20:VAL:HG11 | 2.00 | 0.43 |
| 28:SQ:53:GLU:OE2 | 28:SQ:85:ARG:NH2 | 2.51 | 0.43 |
| 36:Sg:39:THR:HG23 | 36:Sg:60:ARG:HG2 | 1.99 | 0.43 |
| 40:L5:19:G:P | 73:Lh:93:ARG:HE | 2.41 | 0.43 |
| 40:L5:288:G:H2' | 40:L5:289:C:C6 | 2.53 | 0.43 |
| 40:L5:1317:U:H2' | 40:L5:1318:C:C6 | 2.53 | 0.43 |
| 41:L7:4:U:H2' | 41:L7:5:A:H8 | 1.83 | 0.43 |
| 43:LA:95:GLN:O | 43:LA:100:ASN:ND2 | 2.35 | 0.43 |
| 62:LV:70:PRO:HA | 62:LV:73:ARG:HG3 | 1.99 | 0.43 |
| 63:LX:129:ARG:NH2 | 63:LX:131:ASP:OD2 | 2.51 | 0.43 |
| 64:LY:67:ILE:HD12 | 64:LY:107:THR:HG21 | 1.99 | 0.43 |
| 82:Lr:47:LYS:HB2 | 82:Lr:102:TYR:CZ | 2.53 | 0.43 |
| 5:SG:5:ILE:HG13 | 5:SG:111:LEU:HD12 | 1.99 | 0.43 |
| 8:SJ:30:LYS:HG2 | 18:Se:42:PHE:CE2 | 2.53 | 0.43 |
| 8:SJ:137:VAL:HG12 | 8:SJ:138:ARG:HG2 | 2.00 | 0.43 |
| 19:S2:1275:G:N2 | 19:S2:1506:A:OP2 | 2.38 | 0.43 |
| 19:S2:1329:U:O2' | 19:S2:1332:A:OP2 | 2.30 | 0.43 |
| 19:S2:1739:C:H2' | 19:S2:1740:C:C6 | 2.53 | 0.43 |
| 35:Sf:93:HIS:HE1 | 35:Sf:96:LYS:HD3 | 1.83 | 0.43 |
| 40:L5:76:A:H5' | 53:LL:101:ARG:NH1 | 2.33 | 0.43 |
| 40:L5:161:G:H2' | 40:L5:162:A:H8 | 1.82 | 0.43 |
| 40:L5:441:G:H2' | 40:L5:442:G:C8 | 2.51 | 0.43 |
| 40:L5:1778:C:O2' | 46:LD:2:GLY:O | 2.34 | 0.43 |
| 40:L5:2022:C:H2' | 40:L5:2023:C:O4' | 2.18 | 0.43 |
| 40:L5:4092:G:C6 | 40:L5:4093:G:C6 | 3.07 | 0.43 |
| 41:L7:114:U:H2' | 41:L7:115:A:C8 | 2.53 | 0.43 |
| 42:L8:9:A:H2' | 42:L8:10:G:C8 | 2.53 | 0.43 |
| 42:L8:70:G:O2' | 42:L8:87:G:N2 | 2.51 | 0.43 |
| 44:LB:161:ARG:HG2 | 44:LB:184:GLN:HA | 2.00 | 0.43 |
| 56:LO:37:ARG:HD2 | 56:LO:108:ILE:HD11 | 1.99 | 0.43 |
| 63:LX:81:LEU:HG | 63:LX:83:THR:HG23 | 2.00 | 0.43 |
| 5:SG:131:ARG:HD3 | 19:S2:168:C:H4' | 2.01 | 0.43 |
| 7:SI:47:ARG:HH22 | 19:S2:446:G:P | 2.42 | 0.43 |
| 8:SJ:104:ASP:OD1 | 8:SJ:105:PHE:N | 2.51 | 0.43 |
| 19:S2:142:C:H42 | 19:S2:329:G:H5" | 1.82 | 0.43 |
| 19:S2:576:A2M:HM'3 | 19:S2:576:A2M:H1' | 1.67 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1513:C:H2' | 19:S2:1514:G:C8 | 2.50 | 0.43 |
| 19:S2:1593:C:P | 32:SZ:103:HIS:HE2 | 2.41 | 0.43 |
| 19:S2:1670:C:H2' | 19:S2:1671:G:H8 | 1.82 | 0.43 |
| 22:SR:114:LEU:HB2 | 22:SR:117:LEU:HG | 2.00 | 0.43 |
| 40:L5:400:A2M:HM'3 | 40:L5:400:A2M:H1' | 1.76 | 0.43 |
| 40:L5:491:G:H2' | 40:L5:492:U:C6 | 2.53 | 0.43 |
| 40:L5:518:G:H1 | 40:L5:643:C:H2' | 1.83 | 0.43 |
| 40:L5:1645:C:H2' | 40:L5:1646:A:H8 | 1.84 | 0.43 |
| 40:L5:1884:C:H2' | 40:L5:1885:G:H8 | 1.83 | 0.43 |
| 40:L5:2521:G:H2' | 40:L5:2522:G:C8 | 2.52 | 0.43 |
| 40:L5:2890:C:H42 | 40:L5:3611:A:H61 | 1.66 | 0.43 |
| 40:L5:4174:U:H2' | 40:L5:4175:G:C8 | 2.47 | 0.43 |
| 40:L5:4524:G:H2' | 40:L5:4525:C:H6 | 1.83 | 0.43 |
| 40:L5:4996:C:OP1 | 69:Ld:32:ARG:NH1 | 2.39 | 0.43 |
| 43:LA:51:ASP:HB3 | 43:LA:54:ARG:HB3 | 2.00 | 0.43 |
| 5:SG:38:ALA:HB1 | 5:SG:41:LEU:HD13 | 2.01 | 0.43 |
| 10:SN:72:LEU:HD22 | 19:S2:1019:C:H5" | 1.99 | 0.43 |
| 13:SW:76:SER:OG | 19:S2:1158:G:O3' | 2.35 | 0.43 |
| 14:SX:90:CYS:HB3 | 14:SX:130:LEU:HD11 | 1.99 | 0.43 |
| 19:S2:601:OMG:H2' | 19:S2:602:G:C8 | 2.53 | 0.43 |
| 19:S2:1171:G:O2' | 19:S2:1187:G:O6 | 2.32 | 0.43 |
| 19:S2:1491:G:H2' | 19:S2:1492:U:C6 | 2.54 | 0.43 |
| 27:SP:59:ARG:O | 27:SP:63:ALA:N | 2.44 | 0.43 |
| 40:L5:697:G:H2' | 40:L5:698:G:C8 | 2.53 | 0.43 |
| 40:L5:2326:G:H5" | 70:Le:127:ALA:HB1 | 2.01 | 0.43 |
| 40:L5:3867:A2M:H2' | 40:L5:3868:G:O4' | 2.18 | 0.43 |
| 40:L5:4089:G:H2' | 40:L5:4090:G:H8 | 1.83 | 0.43 |
| 40:L5:4090:G:H2' | 40:L5:4091:G:H8 | 1.84 | 0.43 |
| 40:L5:4619:U:H2' | 40:L5:4620:OMU:H6 | 1.99 | 0.43 |
| 40:L5:4859:C:H2' | 40:L5:4860:G:C8 | 2.53 | 0.43 |
| 40:L5:4883:C:N4 | 47:LE:181:LEU:O | 2.43 | 0.43 |
| 47:LE:141:ARG:NH1 | 71:Lf:108:SER:O | 2.50 | 0.43 |
| 49:LG:162:ASP:HB3 | 49:LG:163:PRO:HD3 | 1.99 | 0.43 |
| 60:LT:43:LYS:N | 60:LT:95:HIS:O | 2.48 | 0.43 |
| 71:Lf:45:LYS:HD2 | 71:Lf:105:LEU:HA | 2.00 | 0.43 |
| 2:SB:127:VAL:HG21 | 2:SB:176:VAL:HB | 2.01 | 0.43 |
| 4:SE:101:LEU:HD11 | 4:SE:109:PHE:HB3 | 2.00 | 0.43 |
| 19:S2:441:C:H2' | 19:S2:442:C:C6 | 2.54 | 0.43 |
| 36:Sg:239:LEU:HD11 | 36:Sg:248:LEU:HD21 | 2.01 | 0.43 |
| 40:L5:1095:A:H2' | 40:L5:1096:C:C6 | 2.53 | 0.43 |
| 40:L5:1100:U:H3 | 40:L5:1194:G:H1 | 1.67 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1274:A:O2' | 40:L5:1275:G:H8 | 2.00 | 0.43 |
| 40:L5:1307:A:H2' | 40:L5:1308:C:C6 | 2.53 | 0.43 |
| 40:L5:1727:U:H2' | 40:L5:1728:U:C6 | 2.53 | 0.43 |
| 40:L5:1978:C:H2' | 40:L5:1979:A:H8 | 1.82 | 0.43 |
| 40:L5:3871:A:H2' | 40:L5:3872:A:C8 | 2.54 | 0.43 |
| 40:L5:4081:G:H2' | 40:L5:4082:G:C8 | 2.54 | 0.43 |
| 40:L5:4319:C:H2' | 40:L5:4320:G:H8 | 1.83 | 0.43 |
| 40:L5:4527:G:OP2 | 40:L5:4527:G:N2 | 2.49 | 0.43 |
| 40:L5:4920:C:H2' | 40:L5:4921:C:C6 | 2.53 | 0.43 |
| 43:LA:112:ILE:HD11 | 81:Lp:79:VAL:HG13 | 2.00 | 0.43 |
| 47:LE:157:HIS:CD2 | 47:LE:187:ARG:HH11 | 2.37 | 0.43 |
| 49:LG:218:LEU:O | 49:LG:222:ILE:HG12 | 2.19 | 0.43 |
| 62:LV:64:THR:HG22 | 62:LV:76:VAL:HA | 2.00 | 0.43 |
| 65:LZ:38:TYR:HE1 | 65:LZ:40:HIS:HB3 | 1.84 | 0.43 |
| 68:Lc:60:ILE:HD13 | 68:Lc:93:THR:HG21 | 1.99 | 0.43 |
| 1:SA:220:LYS:HD3 | 1:SA:220:LYS:HA | 1.84 | 0.43 |
| 3:SC:178:HIS:HB3 | 3:SC:200:ARG:HE | 1.81 | 0.43 |
| 8:SJ:59:GLU:O | 8:SJ:62:THR:OG1 | 2.27 | 0.43 |
| 19:S2:350:C:O2' | 19:S2:383:G:N1 | 2.37 | 0.43 |
| 19:S2:568:C:H2' | 19:S2:569:A:C8 | 2.54 | 0.43 |
| 19:S2:1313:A:H5" | 25:SK:5:LYS:HE3 | 2.00 | 0.43 |
| 19:S2:1317:C:H2' | 19:S2:1318:G:C8 | 2.54 | 0.43 |
| 19:S2:1487:A:H2' | 19:S2:1488:C:C6 | 2.54 | 0.43 |
| 20:LR:134:ASN:OD1 | 20:LR:135:LYS:N | 2.51 | 0.43 |
| 28:SQ:8:GLN:HG3 | 28:SQ:99:TYR:CE1 | 2.53 | 0.43 |
| 28:SQ:110:ASP:HA | 28:SQ:113:ILE:HG22 | 2.01 | 0.43 |
| 40:L5:283:G:H2' | 40:L5:284:G:H8 | 1.84 | 0.43 |
| 40:L5:500:G:O2' | 40:L5:504:G:H3' | 2.19 | 0.43 |
| 40:L5:920:C:H2' | 40:L5:921:C:C6 | 2.53 | 0.43 |
| 40:L5:1662:C:H2' | 40:L5:1663:C:C6 | 2.53 | 0.43 |
| 40:L5:2095:A:H1' | 40:L5:2096:G:N2 | 2.34 | 0.43 |
| 40:L5:2249:C:H2' | 40:L5:2250:C:C5 | 2.53 | 0.43 |
| 40:L5:2364:OMG:H1' | 40:L5:2364:OMG:HM23 | 1.66 | 0.43 |
| 40:L5:2634:C:H2' | 40:L5:2635:U:H6 | 1.84 | 0.43 |
| 40:L5:2870:A:H2' | 40:L5:2871:A:H8 | 1.84 | 0.43 |
| 40:L5:3796:U:H2' | 40:L5:3797:C:C6 | 2.53 | 0.43 |
| 40:L5:3920:PSU:H2' | 40:L5:3921:U:C6 | 2.54 | 0.43 |
| 40:L5:4139:G:H1' | 40:L5:4146:G:N1 | 2.33 | 0.43 |
| 40:L5:4159:C:H2' | 40:L5:4160:C:C6 | 2.54 | 0.43 |
| 40:L5:4401:G:H2' | 40:L5:4402:C:C6 | 2.54 | 0.43 |
| 40:L5:4776:G:H22 | 40:L5:4859:C:H1' | 1.83 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 42:L8:44:A:H2' | 42:L8:45:C:C6 | 2.53 | 0.43 |
| 43:LA:36:GLU:HG3 | 43:LA:91:GLY:HA2 | 1.99 | 0.43 |
| 43:LA:242:ARG:NH1 | 43:LA:243:THR:O | 2.52 | 0.43 |
| 48:LF:226:HIS:CD2 | 48:LF:234:GLY:HA3 | 2.54 | 0.43 |
| 69:Ld:37:GLY:O | 69:Ld:41:ARG:HG3 | 2.19 | 0.43 |
| 78:Lm:80:PRO:HA | 78:Lm:83:ARG:HB3 | 1.99 | 0.43 |
| 82:Lr:32:LEU:HD21 | 82:Lr:50:GLY:HA2 | 2.01 | 0.43 |
| 4:SE:103:TYR:HB2 | 4:SE:182:MET:HE2 | 1.99 | 0.43 |
| 15:SY:119:GLY:O | 19:S2:84:A:O2' | 2.31 | 0.43 |
| 19:S2:354:OMU:HM23 | 19:S2:354:OMU:H1' | 1.73 | 0.43 |
| 19:S2:534:G:H2' | 19:S2:535:G:H8 | 1.82 | 0.43 |
| 19:S2:1616:U:H2' | 19:S2:1617:G:C8 | 2.53 | 0.43 |
| 19:S2:1677:U:OP2 | 24:SF:63:LYS:NZ | 2.35 | 0.43 |
| 22:SR:41:ILE:HD13 | 22:SR:50:ILE:HD12 | 1.99 | 0.43 |
| 23:SD:134:CYS:SG | 23:SD:135:GLU:N | 2.91 | 0.43 |
| 36:Sg:101:PHE:CE2 | 36:Sg:136:GLY:HA2 | 2.53 | 0.43 |
| 36:Sg:258:ILE:HG23 | 36:Sg:267:VAL:HB | 2.00 | 0.43 |
| 37:At:40:C:H2' | 37:At:41:G:H8 | 1.84 | 0.43 |
| 37:At:67:G:H2' | 37:At:68:G:C8 | 2.54 | 0.43 |
| 40:L5:6:C:H2' | 40:L5:7:C:C6 | 2.54 | 0.43 |
| 40:L5:132:G:H2' | 40:L5:133:C:H4' | 2.00 | 0.43 |
| 40:L5:958:G:C2 | 47:LE:124:LYS:HD2 | 2.53 | 0.43 |
| 40:L5:2421:G:H1' | 57:LP:139:TYR:CE2 | 2.54 | 0.43 |
| 40:L5:4094:G:H1 | 40:L5:4114:C:H2' | 1.84 | 0.43 |
| 40:L5:4364:G:H2' | 40:L5:4365:C:C6 | 2.54 | 0.43 |
| 41:L7:37:G:H2' | 41:L7:38:U:O4' | 2.18 | 0.43 |
| 42:L8:153:C:H2' | 42:L8:154:G:C8 | 2.51 | 0.43 |
| 47:LE:190:HIS:HB3 | 47:LE:193:PHE:HD1 | 1.83 | 0.43 |
| 52:LJ:35:ARG:NH2 | 52:LJ:126:TYR:OH | 2.51 | 0.43 |
| 68:Lc:51:ASN:HB2 | 68:Lc:77:ASN:HB2 | 2.01 | 0.43 |
| 19:S2:159:A2M:H1' | 19:S2:159:A2M:HM'3 | 1.55 | 0.43 |
| 19:S2:201:C:H3' | 19:S2:202:G:H21 | 1.83 | 0.43 |
| 19:S2:656:G:H5' | 19:S2:662:G:N2 | 2.34 | 0.43 |
| 19:S2:671:A:H4' | 19:S2:672:A:H5" | 2.00 | 0.43 |
| 19:S2:1023:A:H2' | 19:S2:1024:A:C8 | 2.53 | 0.43 |
| 29:SS:84:LEU:HD22 | 29:SS:97:GLN:HB2 | 2.00 | 0.43 |
| 30:ST:104:LEU:HD22 | 30:ST:121:ARG:HD2 | 2.00 | 0.43 |
| 36:Sg:45:LEU:HB3 | 36:Sg:47:ARG:HE | 1.83 | 0.43 |
| 40:L5:271:C:H2' | 40:L5:272:U:C6 | 2.54 | 0.43 |
| 40:L5:318:A:O2' | 40:L5:3727:A:H1' | 2.19 | 0.43 |
| 40:L5:948:C:H2' | 40:L5:949:G:H8 | 1.84 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1247:U:H2' | 40:L5:1248:C:C6 | 2.54 | 0.43 |
| 40:L5:1749:A:H2' | 40:L5:1750:G:H8 | 1.84 | 0.43 |
| 40:L5:3911:C:H2' | 40:L5:3912:U:C6 | 2.54 | 0.43 |
| 40:L5:4561:C:H2' | 40:L5:4562:C:H6 | 1.84 | 0.43 |
| 40:L5:4630:G:H2' | 40:L5:4631:G:H8 | 1.82 | 0.43 |
| 40:L5:4745:G:N2 | 40:L5:4955:A:N1 | 2.60 | 0.43 |
| 41:L7:4:U:H2' | 41:L7:5:A:C8 | 2.53 | 0.43 |
| 47:LE:207:LYS:HA | 47:LE:207:LYS:HD3 | 1.71 | 0.43 |
| 57:LP:24:VAL:HG12 | 57:LP:86:LYS:HG2 | 2.00 | 0.43 |
| 61:LU:80:LYS:HE2 | 61:LU:110:TYR:CZ | 2.54 | 0.43 |
| 70:Le:124:ASN:HB2 | 70:Le:127:ALA:HB2 | 2.00 | 0.43 |
| 75:Lj:28:HIS:HE1 | 75:Lj:30:GLN:HB3 | 1.84 | 0.43 |
| 1:SA:177:MET:HE1 | 1:SA:180:ARG:HH21 | 1.84 | 0.43 |
| 4:SE:123:LEU:HD22 | 4:SE:159:THR:HG22 | 2.00 | 0.43 |
| 5:SG:232:ARG:HD3 | 5:SG:232:ARG:HA | 1.86 | 0.43 |
| 7:SI:13:LYS:NZ | 9:SL:108:ASN:O | 2.51 | 0.43 |
| 14:SX:9:THR:HG22 | 19:S2:681:PSU:H4' | 2.01 | 0.43 |
| 15:SY:29:HIS:NE2 | 15:SY:69:THR:OG1 | 2.37 | 0.43 |
| 19:S2:158:A:N1 | 19:S2:463:C:H1' | 2.34 | 0.43 |
| 19:S2:669:A:O2' | 19:S2:670:A:O4' | 2.27 | 0.43 |
| 19:S2:808:A:H2 | 19:S2:855:G:H22 | 1.67 | 0.43 |
| 19:S2:812:A:H2' | 19:S2:813:A:C8 | 2.54 | 0.43 |
| 19:S2:1406:G:H2' | 19:S2:1407:U:C6 | 2.54 | 0.43 |
| 19:S2:1410:C:H2' | 19:S2:1411:G:C8 | 2.53 | 0.43 |
| 19:S2:1421:A:H3' | 19:S2:1422:G:C8 | 2.54 | 0.43 |
| 19:S2:1513:C:OP1 | 34:Sd:12:ARG:NH2 | 2.36 | 0.43 |
| 21:LW:102:LYS:HA | 21:LW:105:ARG:HG2 | 2.01 | 0.43 |
| 36:Sg:178:ASN:HB3 | 36:Sg:181:ASN:OD1 | 2.18 | 0.43 |
| 37:At:22:U:H2' | 37:At:23:C:C6 | 2.53 | 0.43 |
| 37:At:49:C:H2' | 37:At:50:U:C6 | 2.54 | 0.43 |
| 39:CI:55:LEU:HD22 | 61:LU:99:TRP:CG | 2.53 | 0.43 |
| 40:L5:1352:C:H2' | 40:L5:1353:G:O4' | 2.19 | 0.43 |
| 40:L5:1464:C:H2' | 40:L5:1465:G:O4' | 2.19 | 0.43 |
| 40:L5:1569:U:H2' | 40:L5:1570:G:H8 | 1.83 | 0.43 |
| 40:L5:1684:A:H4' | 40:L5:4304:A:H4' | 2.01 | 0.43 |
| 40:L5:2081:C:H2' | 40:L5:2082:G:C8 | 2.53 | 0.43 |
| 40:L5:2654:C:H2' | 40:L5:2655:C:C6 | 2.52 | 0.43 |
| 40:L5:3942:A:H3' | 40:L5:3943:A:H8 | 1.84 | 0.43 |
| 40:L5:3950:U:C4 | 40:L5:3951:G:H1' | 2.54 | 0.43 |
| 40:L5:4620:OMU:H1' | 40:L5:4620:OMU:HM23 | 1.77 | 0.43 |
| 40:L5:4736:C:H2' | 40:L5:4737:G:C8 | 2.53 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:4892:A:H2' | 40:L5:4893:A:O4' | 2.18 | 0.43 |
| 42:L8:75:OMG:H1' | 42:L8:75:OMG:HM23 | 1.73 | 0.43 |
| 46:LD:41:LYS:NZ | 60:LT:30:TYR:O | 2.38 | 0.43 |
| 51:LI:152:LEU:HB3 | 51:LI:165:ILE:HD12 | 2.00 | 0.43 |
| 65:LZ:135:ARG:HD2 | 65:LZ:135:ARG:HA | 1.83 | 0.43 |
| 84:Lt:16:ARG:NE | 84:Lt:17:CYS:H | 2.09 | 0.43 |
| 1:SA:43:SER:HB2 | 22:SR:126:MET:HG2 | 2.01 | 0.43 |
| 2:SB:85:LYS:HB2 | 2:SB:101:HIS:HB3 | 2.00 | 0.43 |
| 10:SN:43:LYS:HE2 | 10:SN:43:LYS:HB2 | 1.92 | 0.43 |
| 19:S2:520:A:O2' | 19:S2:825:A:N3 | 2.51 | 0.43 |
| 19:S2:1198:G:H2' | 19:S2:1199:A:H8 | 1.83 | 0.43 |
| 19:S2:1538:C:H2' | 19:S2:1539:U:C6 | 2.53 | 0.43 |
| 19:S2:1545:A:H4' | 28:SQ:75:GLY:H | 1.84 | 0.43 |
| 28:SQ:20:THR:HG23 | 28:SQ:73:LYS:H | 1.84 | 0.43 |
| 37:At:3:C:H2' | 37:At:4:U:C6 | 2.54 | 0.43 |
| 38:Pt:73:A:O2' | 51:LI:109:ASP:O | 2.30 | 0.43 |
| 40:L5:169:G:O6 | 40:L5:170:C:N4 | 2.52 | 0.43 |
| 40:L5:396:A:H2' | 40:L5:397:G:C8 | 2.54 | 0.43 |
| 40:L5:1320:U:O2' | 40:L5:1891:A:N1 | 2.47 | 0.43 |
| 40:L5:1478:C:H2' | 40:L5:1479:G:C8 | 2.52 | 0.43 |
| 40:L5:1669:A:H4' | 40:L5:1685:G:H21 | 1.83 | 0.43 |
| 40:L5:1685:G:H2' | 40:L5:1686:C:H6 | 1.83 | 0.43 |
| 40:L5:2437:C:H5' | 63:LX:127:LEU:HB3 | 2.01 | 0.43 |
| 40:L5:4377:G:N7 | 66:La:42:ARG:NH2 | 2.67 | 0.43 |
| 51:LI:190:LEU:HD23 | 51:LI:199:TYR:HA | 2.00 | 0.43 |
| 54:LM:37:LEU:HD12 | 54:LM:37:LEU:HA | 1.84 | 0.43 |
| 2:SB:145:LYS:HE3 | 2:SB:145:LYS:HB2 | 1.90 | 0.42 |
| 2:SB:175:GLU:HB3 | 2:SB:187:LYS:NZ | 2.32 | 0.42 |
| 4:SE:21:ASP:HB2 | 19:S2:829:C:H5" | 2.01 | 0.42 |
| 4:SE:61:VAL:HA | 4:SE:64:ILE:HG22 | 2.01 | 0.42 |
| 8:SJ:22:LYS:NZ | 19:S2:604:A:O3' | 2.42 | 0.42 |
| 19:S2:386:C:H2' | 19:S2:387:C:C6 | 2.54 | 0.42 |
| 19:S2:495:U:H2' | 19:S2:496:C:O4' | 2.19 | 0.42 |
| 19:S2:1236:G:H2' | 19:S2:1237:C:H6 | 1.83 | 0.42 |
| 33:Sc:58:LEU:HD23 | 33:Sc:58:LEU:HA | 1.88 | 0.42 |
| 37:At:18:G:O2' | 37:At:57:G:N2 | 2.47 | 0.42 |
| 38:Pt:27:U:H2' | 38:Pt:28:U:H6 | 1.83 | 0.42 |
| 40:L5:66:A:O2' | 40:L5:326:C:O2 | 2.31 | 0.42 |
| 40:L5:260:C:H2' | 40:L5:261:G:C8 | 2.54 | 0.42 |
| 40:L5:727:C:H2' | 40:L5:728:U:C6 | 2.54 | 0.42 |
| 40:L5:947:C:OP1 | 45:LC:336:ARG:NH1 | 2.52 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1259:G:H2' | 40:L5:1260:G:C8 | 2.53 | 0.42 |
| 40:L5:2543:A:H2 | 40:L5:2773:G:H22 | 1.66 | 0.42 |
| 40:L5:2648:G:H2' | 40:L5:2649:G:H8 | 1.83 | 0.42 |
| 40:L5:3893:C:H2' | 40:L5:3894:A:H8 | 1.84 | 0.42 |
| 40:L5:4582:C:N4 | 40:L5:4722:G:O6 | 2.51 | 0.42 |
| 40:L5:4878:C:H2' | 40:L5:4879:C:C6 | 2.54 | 0.42 |
| 40:L5:5002:U:OP2 | 44:LB:385:LYS:NZ | 2.41 | 0.42 |
| 42:L8:69:PSU:H2' | 42:L8:70:G:O4' | 2.19 | 0.42 |
| 42:L8:138:C:H2' | 42:L8:139:G:C8 | 2.54 | 0.42 |
| 43:LA:80:GLU:HB2 | 43:LA:170:ALA:HA | 2.01 | 0.42 |
| 49:LG:94:GLN:HG3 | 49:LG:218:LEU:HD21 | 2.00 | 0.42 |
| 58:LQ:178:ARG:N | 66:La:51:GLY:HA2 | 2.34 | 0.42 |
| 1:SA:32:PHE:CD1 | 19:S2:1097:G:H4' | 2.54 | 0.42 |
| 1:SA:41:ARG:NH1 | 1:SA:47:TYR:OH | 2.52 | 0.42 |
| 6:SH:118:ARG:HD3 | 6:SH:118:ARG:HA | 1.77 | 0.42 |
| 8:SJ:2:PRO:HD2 | 19:S2:428:OMU:H4' | 2.00 | 0.42 |
| 8:SJ:32:ILE:HD11 | 8:SJ:40:LYS:HG2 | 2.00 | 0.42 |
| 19:S2:61:A:H1' | 19:S2:316:G:H1' | 2.01 | 0.42 |
| 19:S2:1102:G:C6 | 19:S2:1131:G:C6 | 3.07 | 0.42 |
| 19:S2:1230:C:H2' | 19:S2:1231:C:H6 | 1.84 | 0.42 |
| 19:S2:1705:C:H2' | 19:S2:1706:G:C8 | 2.54 | 0.42 |
| 19:S2:1850:MA6:H8 | 19:S2:1850:MA6:O5' | 2.19 | 0.42 |
| 22:SR:99:ASP:HB3 | 22:SR:102:THR:HG23 | 2.01 | 0.42 |
| 23:SD:173:ARG:HA | 23:SD:173:ARG:HD3 | 1.89 | 0.42 |
| 25:SK:18:GLU:HA | 25:SK:91:PRO:HB3 | 2.01 | 0.42 |
| 26:SM:95:ASP:HB3 | 26:SM:99:LYS:HB3 | 2.01 | 0.42 |
| 40:L5:388:A:H5' | 40:L5:389:A:H5' | 2.01 | 0.42 |
| 40:L5:728:U:OP1 | 48:LF:73:ARG:NH1 | 2.52 | 0.42 |
| 40:L5:1415:G:H2' | 40:L5:1416:G:C8 | 2.54 | 0.42 |
| 40:L5:2732:G:H2' | 40:L5:2733:C:C6 | 2.54 | 0.42 |
| 40:L5:4765:G:H2' | 40:L5:4766:C:O4' | 2.19 | 0.42 |
| 40:L5:4873:G:C8 | 56:LO:179:LYS:HE3 | 2.54 | 0.42 |
| 44:LB:48:GLY:O | 44:LB:345:LEU:N | 2.44 | 0.42 |
| 44:LB:103:LYS:HB3 | 44:LB:153:MET:HE2 | 2.01 | 0.42 |
| 56:LO:15:LEU:HB2 | 56:LO:18:ARG:HB2 | 2.01 | 0.42 |
| 64:LY:54:GLU:HB2 | 64:LY:67:ILE:HG22 | 2.01 | 0.42 |
| 84:Lt:10:ILE:HG12 | 84:Lt:65:GLN:HG2 | 2.01 | 0.42 |
| 7:SI:116:HIS:CE1 | 7:SI:152:ARG:HH21 | 2.38 | 0.42 |
| 7:SI:157:LYS:NZ | 7:SI:158:ILE:O | 2.48 | 0.42 |
| 16:Sa:13:LYS:HD3 | 16:Sa:13:LYS:HA | 1.74 | 0.42 |
| 19:S2:526:A:H2' | 19:S2:527:C:C6 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:974:C:H2' | 19:S2:975:G:H8 | 1.83 | 0.42 |
| 19:S2:1765:C:H5" | 19:S2:1771:G:N7 | 2.34 | 0.42 |
| 23:SD:39:VAL:HG22 | 23:SD:48:ILE:HG12 | 2.01 | 0.42 |
| 36:Sg:228:TYR:CE2 | 36:Sg:230:LEU:HB2 | 2.55 | 0.42 |
| 38:Pt:56:C:H2' | 38:Pt:57:G:C8 | 2.54 | 0.42 |
| 40:L5:745:G:H2' | 40:L5:746:A:C8 | 2.54 | 0.42 |
| 40:L5:1812:C:H5" | 67:Lb:56:LYS:HE3 | 2.00 | 0.42 |
| 40:L5:2019:C:H2' | 40:L5:2020:U:C6 | 2.54 | 0.42 |
| 40:L5:2465:C:H2' | 40:L5:2466:G:O4' | 2.19 | 0.42 |
| 40:L5:2580:U:O2' | 65:LZ:79:HIS:ND1 | 2.52 | 0.42 |
| 40:L5:3608:A:H2' | 40:L5:3609:G:H8 | 1.84 | 0.42 |
| 40:L5:4122:G:H1' | 72:Lg:94:ALA:HB2 | 2.01 | 0.42 |
| 40:L5:4471:PSU:OP1 | 50:LH:168:LYS:NZ | 2.48 | 0.42 |
| 40:L5:4590:A2M:HM'3 | 40:L5:4590:A2M:H1' | 1.50 | 0.42 |
| 41:L7:108:G:OP1 | 46:LD:273:LEU:HB2 | 2.20 | 0.42 |
| 44:LB:66:LYS:HG2 | 62:LV:11:GLY:HA3 | 2.01 | 0.42 |
| 46:LD:164:LYS:HD2 | 46:LD:164:LYS:HA | 1.84 | 0.42 |
| 51:LI:80:CYS:SG | 51:LI:147:HIS:ND1 | 2.91 | 0.42 |
| 52:LJ:44:THR:HA | 52:LJ:78:LYS:HE2 | 2.02 | 0.42 |
| 56:LO:121:PRO:HA | 56:LO:124:LEU:HD12 | 2.01 | 0.42 |
| 58:LQ:50:ARG:HA | 58:LQ:53:MET:HE3 | 2.00 | 0.42 |
| 61:LU:80:LYS:HZ1 | 61:LU:109:SER:H | 1.66 | 0.42 |
| 67:Lb:69:ALA:HA | 67:Lb:72:ILE:HD12 | 2.00 | 0.42 |
| 69:Ld:33:ILE:HD11 | 69:Ld:45:ALA:HA | 2.01 | 0.42 |
| 72:Lg:64:LEU:HD23 | 72:Lg:67:LEU:HD12 | 2.01 | 0.42 |
| 83:Ls:58:ASN:ND2 | 83:Ls:84:GLY:O | 2.52 | 0.42 |
| 1:SA:70:ASN:HB3 | 1:SA:73:ASP:HB2 | 2.01 | 0.42 |
| 4:SE:124:CYS:HB2 | 4:SE:160:ILE:HG13 | 2.01 | 0.42 |
| 12:SV:30:ALA:O | 12:SV:60:ARG:HD3 | 2.19 | 0.42 |
| 19:S2:373:G:H2' | 19:S2:374:G:H8 | 1.84 | 0.42 |
| 19:S2:455:A:H2' | 19:S2:456:C:C6 | 2.54 | 0.42 |
| 19:S2:601:OMG:H1' | 19:S2:601:OMG:HM23 | 1.62 | 0.42 |
| 19:S2:1113:A:N6 | 19:S2:1121:G:C6 | 2.88 | 0.42 |
| 19:S2:1279:C:H2' | 19:S2:1280:G:C8 | 2.55 | 0.42 |
| 19:S2:1601:A:O4' | 19:S2:1636:G:N2 | 2.53 | 0.42 |
| 20:LR:148:ASP:OD1 | 20:LR:149:LYS:N | 2.52 | 0.42 |
| 40:L5:909:A:H2' | 40:L5:910:G:C8 | 2.54 | 0.42 |
| 40:L5:1338:G:H4' | 40:L5:1339:U:C6 | 2.55 | 0.42 |
| 40:L5:2670:C:H2' | 40:L5:2671:C:C6 | 2.55 | 0.42 |
| 40:L5:2789:A:H1' | 77:Ll:45:ARG:HH22 | 1.85 | 0.42 |
| 40:L5:4088:C:O2 | 49:LG:53:ARG:NH2 | 2.52 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:4091:G:H3' | 40:L5:4114:C:H42 | 1.84 | 0.42 |
| 40:L5:4208:U:OP2 | 60:LT:4:THR:OG1 | 2.29 | 0.42 |
| 44:LB:206:PRO:HG2 | 44:LB:209:GLN:HG3 | 2.00 | 0.42 |
| 50:LH:84:VAL:HG23 | 50:LH:85:THR:HG23 | 2.02 | 0.42 |
| 2:SB:122:GLU:HG2 | 2:SB:140:VAL:HG12 | 2.00 | 0.42 |
| 2:SB:144:LYS:HD3 | 2:SB:208:HIS:CG | 2.55 | 0.42 |
| 4:SE:122:LYS:HE2 | 4:SE:124:CYS:SG | 2.59 | 0.42 |
| 7:SI:10:LYS:HB3 | 7:SI:10:LYS:HE3 | 1.87 | 0.42 |
| 7:SI:78:ILE:HG13 | 7:SI:104:ILE:HG22 | 2.00 | 0.42 |
| 9:SL:133:PRO:HG2 | 19:S2:383:G:N2 | 2.33 | 0.42 |
| 13:SW:88:LYS:NZ | 19:S2:420:G:OP1 | 2.52 | 0.42 |
| 19:S2:1129:G:H2' | 19:S2:1130:G:C4 | 2.53 | 0.42 |
| 19:S2:1791:A:H2' | 19:S2:1792:G:O4' | 2.20 | 0.42 |
| 19:S2:1817:G:H2' | 19:S2:1818:A:C8 | 2.55 | 0.42 |
| 20:LR:46:LYS:HE2 | 40:L5:2710:C:N4 | 2.34 | 0.42 |
| 30:ST:42:HIS:HB3 | 30:ST:93:SER:HB3 | 2.02 | 0.42 |
| 36:Sg:296:GLN:O | 36:Sg:312:VAL:HG12 | 2.20 | 0.42 |
| 40:L5:158:A:H5" | 40:L5:159:C:H2' | 2.01 | 0.42 |
| 40:L5:409:G:N3 | 57:LP:3:ARG:NH1 | 2.68 | 0.42 |
| 40:L5:1253:G:HO2' | 40:L5:1257:A:H62 | 1.56 | 0.42 |
| 40:L5:1366:G:N2 | 53:LL:33:ILE:HD13 | 2.34 | 0.42 |
| 40:L5:1985:G:H1' | 40:L5:2003:G:H2' | 2.02 | 0.42 |
| 40:L5:2395:A:N6 | 40:L5:2820:C:O2 | 2.53 | 0.42 |
| 40:L5:2430:C:H2' | 40:L5:2431:A:H8 | 1.83 | 0.42 |
| 40:L5:2483:G:N2 | 40:L5:2495:U:O2 | 2.43 | 0.42 |
| 40:L5:4403:PSU:HN3 | 40:L5:4440:G:H1 | 1.68 | 0.42 |
| 40:L5:4769:G:H2' | 40:L5:4770:U:H6 | 1.84 | 0.42 |
| 40:L5:4885:U:O4 | 47:LE:272:ARG:NH2 | 2.52 | 0.42 |
| 45:LC:171:LEU:HD13 | 45:LC:180:ILE:HG13 | 2.01 | 0.42 |
| 48:LF:116:GLN:HB2 | 58:LQ:3:VAL:HG12 | 2.02 | 0.42 |
| 59:LS:94:TYR:OH | 59:LS:96:GLU:OE2 | 2.28 | 0.42 |
| 67:Lb:91:ARG:HB3 | 67:Lb:94:ASP:HB2 | 2.01 | 0.42 |
| 1:SA:124:VAL:HG12 | 1:SA:125:THR:O | 2.19 | 0.42 |
| 10:SN:73:ARG:HD2 | 19:S2:916:A:C6 | 2.54 | 0.42 |
| 19:S2:14:C:O2 | 19:S2:668:A2M:H2 | 2.20 | 0.42 |
| 19:S2:29:G:H2' | 19:S2:30:C:C6 | 2.54 | 0.42 |
| 19:S2:696:G:H21 | 19:S2:737:G:N2 | 2.18 | 0.42 |
| 19:S2:834:C:H42 | 19:S2:839:C:H42 | 1.68 | 0.42 |
| 19:S2:947:G:H2' | 19:S2:948:C:C6 | 2.55 | 0.42 |
| 19:S2:1218:C:H2' | 19:S2:1219:C:C6 | 2.55 | 0.42 |
| 19:S2:1545:A:H2' | 19:S2:1546:G:C8 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1643:U:H2' | 19:S2:1644:C:C6 | 2.54 | 0.42 |
| 19:S2:1716:C:H2' | 19:S2:1717:C:C6 | 2.54 | 0.42 |
| 19:S2:1842:4AC:H2' | 19:S2:1843:G:C8 | 2.54 | 0.42 |
| 26:SM:113:ASP:OD1 | 26:SM:114:TYR:N | 2.51 | 0.42 |
| 30:ST:80:GLY:HA3 | 30:ST:94:ARG:HA | 2.02 | 0.42 |
| 32:SZ:103:HIS:CE1 | 32:SZ:104:ARG:HG2 | 2.54 | 0.42 |
| 37:At:52:G:H2' | 37:At:53:G:H8 | 1.83 | 0.42 |
| 40:L5:121:A:H62 | 40:L5:152:U:H3 | 1.66 | 0.42 |
| 40:L5:295:A:C8 | 80:Lo:39:ARG:NH1 | 2.88 | 0.42 |
| 40:L5:701:G:H2' | 40:L5:702:U:C6 | 2.54 | 0.42 |
| 40:L5:702:U:H2' | 40:L5:703:G:O4' | 2.20 | 0.42 |
| 40:L5:1211:G:H2' | 40:L5:1212:G:H8 | 1.84 | 0.42 |
| 40:L5:1315:C:H2' | 40:L5:1316:OMG:H8 | 1.84 | 0.42 |
| 40:L5:1351:G:H2' | 40:L5:1352:C:C6 | 2.54 | 0.42 |
| 40:L5:1789:C:H2' | 40:L5:1790:U:C6 | 2.54 | 0.42 |
| 40:L5:1933:G:H8 | 40:L5:1933:G:O5' | 2.01 | 0.42 |
| 40:L5:2028:C:H2' | 40:L5:2029:A:H8 | 1.85 | 0.42 |
| 40:L5:2264:C:H2' | 40:L5:2265:G:O4' | 2.19 | 0.42 |
| 40:L5:2411:C:H2' | 40:L5:2412:A:C8 | 2.52 | 0.42 |
| 40:L5:3910:C:H2' | 40:L5:3911:C:C6 | 2.55 | 0.42 |
| 40:L5:4184:G:H5' | 43:LA:233:ARG:HB2 | 2.01 | 0.42 |
| 40:L5:4716:C:H2' | 40:L5:4717:A:H8 | 1.85 | 0.42 |
| 87:L5:5292:SPM:H62 | 87:L5:5292:SPM:H31 | 1.81 | 0.42 |
| 50:LH:151:ILE:O | 50:LH:155:SER:OG | 2.31 | 0.42 |
| 76:Lk:57:LYS:HA | 76:Lk:60:LEU:HG | 2.02 | 0.42 |
| 8:SJ:87:LEU:HD13 | 8:SJ:100:LEU:HD21 | 2.02 | 0.42 |
| 8:SJ:173:VAL:HG23 | 19:S2:560:A:H3' | 2.01 | 0.42 |
| 19:S2:959:G:H1' | 19:S2:964:A:H61 | 1.85 | 0.42 |
| 19:S2:991:G:C6 | 19:S2:1134:G:H4' | 2.54 | 0.42 |
| 19:S2:1373:C:H2' | 19:S2:1374:C:C6 | 2.55 | 0.42 |
| 19:S2:1568:C:OP1 | 30:ST:96:SER:OG | 2.33 | 0.42 |
| 19:S2:1862:G:H1' | 19:S2:1863:A:H2' | 2.02 | 0.42 |
| 26:SM:60:MET:HE3 | 26:SM:64:LEU:HB2 | 2.01 | 0.42 |
| 27:SP:45:LEU:HD23 | 27:SP:45:LEU:HA | 1.84 | 0.42 |
| 38:Pt:35:A:H2' | 38:Pt:36:C:H6 | 1.85 | 0.42 |
| 40:L5:138:G:H2' | 40:L5:139:G:C8 | 2.55 | 0.42 |
| 40:L5:670:G:H2' | 40:L5:671:G:H8 | 1.84 | 0.42 |
| 40:L5:1626:G:OP2 | 55:LN:77:LYS:NZ | 2.52 | 0.42 |
| 40:L5:1744:PSU:C4 | 40:L5:1745:G:C8 | 3.07 | 0.42 |
| 40:L5:2832:A:H2' | 40:L5:2833:A:C8 | 2.54 | 0.42 |
| 40:L5:3732:A:H2' | 40:L5:3733:A:H8 | 1.85 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:3919:C:H2' | 40:L5:3920:PSU:H6 | 1.84 | 0.42 |
| 40:L5:4070:U:H2' | 40:L5:4071:U:C6 | 2.54 | 0.42 |
| 40:L5:4141:G:H5' | 40:L5:4142:C:H5 | 1.84 | 0.42 |
| 40:L5:4262:C:H2' | 40:L5:4263:C:C6 | 2.54 | 0.42 |
| 40:L5:4278:C:OP2 | 60:LT:22:HIS:ND1 | 2.46 | 0.42 |
| 40:L5:4977:A:H2' | 40:L5:4978:G:C8 | 2.55 | 0.42 |
| 54:LM:104:MET:HG3 | 54:LM:108:ASP:HB2 | 2.01 | 0.42 |
| 62:LV:127:ASP:OD1 | 62:LV:128:LEU:N | 2.52 | 0.42 |
| 69:Ld:18:ASN:OD1 | 69:Ld:19:GLU:N | 2.53 | 0.42 |
| 5:SG:59:GLN:NE2 | 19:S2:466:G:H1' | 2.34 | 0.42 |
| 7:SI:49:ARG:HE | 19:S2:446:G:H5" | 1.84 | 0.42 |
| 8:SJ:114:VAL:HG11 | 8:SJ:135:ILE:HG12 | 2.02 | 0.42 |
| 9:SL:42:LEU:HG | 19:S2:291:G:C2 | 2.54 | 0.42 |
| 14:SX:46:HIS:HB3 | 14:SX:101:LEU:HD11 | 2.01 | 0.42 |
| 17:Sb:17:ARG:HD2 | 19:S2:1127:C:H4' | 2.01 | 0.42 |
| 18:Se:12:VAL:HG23 | 19:S2:616:A:H1' | 2.02 | 0.42 |
| 19:S2:90:G:H2' | 19:S2:91:A:O4' | 2.20 | 0.42 |
| 19:S2:959:G:H1' | 19:S2:964:A:N6 | 2.35 | 0.42 |
| 19:S2:1285:G:N1 | 26:SM:57:ASP:OD1 | 2.53 | 0.42 |
| 25:SK:12:TYR:HE1 | 25:SK:52:LEU:HD11 | 1.84 | 0.42 |
| 40:L5:304:C:H2' | 40:L5:305:A:O4' | 2.20 | 0.42 |
| 40:L5:730:G:OP2 | 48:LF:76:ARG:NE | 2.46 | 0.42 |
| 40:L5:742:G:H2' | 40:L5:743:G:C8 | 2.54 | 0.42 |
| 40:L5:750:U:C2 | 40:L5:751:G:C8 | 3.07 | 0.42 |
| 40:L5:1414:C:O2' | 40:L5:1415:G:H5' | 2.20 | 0.42 |
| 40:L5:1517:G:H2' | 40:L5:1518:A:C5 | 2.55 | 0.42 |
| 40:L5:2059:C:H2' | 40:L5:2060:G:H8 | 1.84 | 0.42 |
| 40:L5:4190:U:O2' | 40:L5:4382:G:OP2 | 2.33 | 0.42 |
| 40:L5:4411:G:H2' | 40:L5:4412:C:C6 | 2.54 | 0.42 |
| 40:L5:4859:C:N4 | 40:L5:4860:G:O6 | 2.53 | 0.42 |
| 40:L5:5051:C:H4' | 44:LB:324:GLY:HA2 | 2.02 | 0.42 |
| 41:L7:33:U:H2' | 41:L7:34:C:C6 | 2.55 | 0.42 |
| 42:L8:45:C:H2' | 42:L8:46:G:H8 | 1.84 | 0.42 |
| 53:LL:130:LYS:HZ2 | 53:LL:131:PRO:HG2 | 1.85 | 0.42 |
| 54:LM:122:ILE:HB | 56:LO:189:ILE:HD11 | 2.02 | 0.42 |
| 55:LN:146:PRO:C | 55:LN:148:THR:H | 2.28 | 0.42 |
| 59:LS:27:LEU:HB3 | 60:LT:148:PRO:HB3 | 2.01 | 0.42 |
| 6:SH:145:ARG:NH1 | 13:SW:51:GLU:OE1 | 2.52 | 0.42 |
| 8:SJ:29:LEU:HD23 | 18:Se:41:ARG:HD2 | 2.01 | 0.42 |
| 19:S2:5:U:H2' | 19:S2:6:G:C8 | 2.54 | 0.42 |
| 19:S2:120:U:H2' | 19:S2:121:OMU:H6 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:319:C:H2' | 19:S2:320:G:C8 | 2.53 | 0.42 |
| 19:S2:462:OMC:H1' | 19:S2:462:OMC:HM23 | 1.80 | 0.42 |
| 19:S2:468:A2M:H1' | 19:S2:468:A2M:HM'3 | 1.62 | 0.42 |
| 19:S2:512:A:H4' | 19:S2:576:A2M:H2 | 2.02 | 0.42 |
| 19:S2:634:A:H2' | 19:S2:635:G:C8 | 2.54 | 0.42 |
| 19:S2:644:OMG:H1' | 19:S2:644:OMG:HM23 | 1.72 | 0.42 |
| 19:S2:1057:C:O2' | 19:S2:1059:G:N7 | 2.39 | 0.42 |
| 19:S2:1355:C:H2' | 19:S2:1356:G:O4' | 2.19 | 0.42 |
| 19:S2:1391:OMC:HM23 | 19:S2:1391:OMC:H1' | 1.89 | 0.42 |
| 25:SK:16:PHE:HB2 | 25:SK:79:LEU:HD13 | 2.02 | 0.42 |
| 31:SU:66:ARG:HH12 | 31:SU:75:LYS:HA | 1.85 | 0.42 |
| 37:At:5:C:H2' | 37:At:6:C:H6 | 1.85 | 0.42 |
| 40:L5:398:A2M:H1' | 40:L5:398:A2M:HM'3 | 1.81 | 0.42 |
| 40:L5:683:C:H2' | 40:L5:684:G:O4' | 2.19 | 0.42 |
| 40:L5:1244:G:H2' | 40:L5:1245:C:H6 | 1.85 | 0.42 |
| 40:L5:1510:G:H2' | 40:L5:1511:U:C6 | 2.54 | 0.42 |
| 40:L5:1660:U:N3 | 40:L5:2345:G:OP1 | 2.44 | 0.42 |
| 40:L5:1973:G:O2' | 84:Lt:78:SER:HB2 | 2.19 | 0.42 |
| 40:L5:2045:G:O2' | 40:L5:2046:G:H5" | 2.19 | 0.42 |
| 40:L5:2053:C:H41 | 56:LO:53:LYS:NZ | 2.18 | 0.42 |
| 40:L5:2400:G:H21 | 72:Lg:6:THR:HG22 | 1.84 | 0.42 |
| 40:L5:3731:C:H2' | 40:L5:3732:A:H8 | 1.85 | 0.42 |
| 40:L5:4411:G:H2' | 40:L5:4412:C:H6 | 1.85 | 0.42 |
| 40:L5:4493:PSU:H2' | 40:L5:4494:OMG:C8 | 2.55 | 0.42 |
| 40:L5:4597:U:H2' | 40:L5:4598:C:O4' | 2.20 | 0.42 |
| 40:L5:4945:G:C2 | 71:Lf:5:LEU:HD12 | 2.54 | 0.42 |
| 43:LA:46:LYS:HD3 | 43:LA:46:LYS:HA | 1.90 | 0.42 |
| 43:LA:196:TRP:HB3 | 43:LA:197:PRO:HD3 | 2.02 | 0.42 |
| 45:LC:334:THR:HG21 | 48:LF:51:TYR:OH | 2.20 | 0.42 |
| 57:LP:131:ARG:HG3 | 57:LP:137:ASN:OD1 | 2.19 | 0.42 |
| 59:LS:81:TRP:HB3 | 59:LS:127:MET:HE3 | 2.02 | 0.42 |
| 1:SA:8:LEU:HD23 | 1:SA:191:ARG:HH12 | 1.84 | 0.42 |
| 2:SB:174:ARG:NE | 2:SB:175:GLU:OE2 | 2.46 | 0.42 |
| 3:SC:114:LYS:HD3 | 3:SC:121:ARG:CZ | 2.50 | 0.42 |
| 4:SE:95:THR:HG22 | 15:SY:16:ARG:HH11 | 1.84 | 0.42 |
| 4:SE:139:LEU:HD22 | 4:SE:147:ILE:HD11 | 2.01 | 0.42 |
| 15:SY:12:PHE:HD1 | 15:SY:23:MET:HB3 | 1.84 | 0.42 |
| 18:Se:39:ASN:HA | 18:Se:43:VAL:HG22 | 2.01 | 0.42 |
| 19:S2:109:PSU:H2' | 19:S2:110:U:C6 | 2.55 | 0.42 |
| 19:S2:118:C:H2' | 19:S2:119:U:O4' | 2.19 | 0.42 |
| 19:S2:452:G:H2' | 19:S2:453:C:H6 | 1.85 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1409:A:H2' | 19:S2:1410:C:C6 | 2.55 | 0.42 |
| 19:S2:1447:G:H2' | 19:S2:1448:A:H8 | 1.85 | 0.42 |
| 19:S2:1792:G:H2' | 19:S2:1793:A:H8 | 1.84 | 0.42 |
| 19:S2:1849:G:H2' | 19:S2:1850:MA6:C8 | 2.50 | 0.42 |
| 20:LR:54:PRO:HG3 | 39:CI:70:ALA:HB2 | 2.02 | 0.42 |
| 27:SP:108:LYS:HG2 | 27:SP:111:MET:HG3 | 2.02 | 0.42 |
| 40:L5:281:U:H2' | 40:L5:282:C:H6 | 1.85 | 0.42 |
| 40:L5:358:C:H2' | 40:L5:359:A:C8 | 2.55 | 0.42 |
| 40:L5:506:C:H2' | 40:L5:507:G:H8 | 1.85 | 0.42 |
| 40:L5:513:U:H3' | 40:L5:514:U:H4' | 2.02 | 0.42 |
| 40:L5:678:C:H2' | 40:L5:679:C:C6 | 2.54 | 0.42 |
| 40:L5:1555:G:N7 | 81:Lp:4:ARG:NH2 | 2.62 | 0.42 |
| 40:L5:1702:C:H2' | 40:L5:1703:C:O4' | 2.20 | 0.42 |
| 40:L5:1846:G:H2' | 40:L5:1847:C:C6 | 2.54 | 0.42 |
| 40:L5:1890:G:OP2 | 40:L5:1890:G:N2 | 2.32 | 0.42 |
| 40:L5:2102:G:H1' | 40:L5:2103:G:N7 | 2.34 | 0.42 |
| 40:L5:3633:C:H2' | 40:L5:3634:G:C8 | 2.54 | 0.42 |
| 40:L5:4261:C:H2' | 40:L5:4262:C:C6 | 2.55 | 0.42 |
| 40:L5:4601:U:H2' | 40:L5:4602:A:H8 | 1.85 | 0.42 |
| 40:L5:4859:C:H2' | 40:L5:4860:G:H8 | 1.85 | 0.42 |
| 40:L5:4954:G:H2' | 40:L5:4955:A:C8 | 2.54 | 0.42 |
| 40:L5:4961:G:H2' | 40:L5:4962:C:C6 | 2.55 | 0.42 |
| 40:L5:4970:C:C2 | 40:L5:4971:A:C8 | 3.08 | 0.42 |
| 40:L5:4971:A:O3' | 57:LP:55:LYS:NZ | 2.42 | 0.42 |
| 42:L8:52:A:H5' | 77:Ll:21:ARG:HD3 | 2.02 | 0.42 |
| 45:LC:361:LEU:HA | 45:LC:364:LYS:HG2 | 2.02 | 0.42 |
| 47:LE:138:ARG:HH21 | 47:LE:170:SER:HA | 1.85 | 0.42 |
| 73:Lh:21:LEU:HD11 | 73:Lh:25:LYS:HE2 | 2.01 | 0.42 |
| 84:Lt:15:LEU:HD13 | 84:Lt:60:VAL:HG13 | 2.02 | 0.42 |
| 4:SE:108:ARG:NH2 | 19:S2:846:G:OP2 | 2.52 | 0.41 |
| 19:S2:96:C:H2' | 19:S2:97:U:H6 | 1.85 | 0.41 |
| 19:S2:107:A:H61 | 19:S2:354:OMU:C4 | 2.30 | 0.41 |
| 19:S2:668:A2M:H1' | 19:S2:668:A2M:HM'3 | 1.70 | 0.41 |
| 19:S2:1344:A:N1 | 19:S2:1385:G:O2' | 2.53 | 0.41 |
| 26:SM:53:ALA:HA | 26:SM:79:VAL:HG12 | 2.01 | 0.41 |
| 36:Sg:63:SER:HB3 | 36:Sg:84:ASP:HB3 | 2.02 | 0.41 |
| 38:Pt:27:U:H2' | 38:Pt:28:U:C6 | 2.55 | 0.41 |
| 40:L5:500:G:H1' | 40:L5:504:G:H2' | 2.02 | 0.41 |
| 40:L5:667:A:H5" | 40:L5:668:C:H5" | 2.01 | 0.41 |
| 40:L5:1253:G:H2' | 40:L5:1256:G:H5' | 2.01 | 0.41 |
| 40:L5:1767:A:N7 | 40:L5:1769:G:H4' | 2.35 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1998:A:N6 | 83:Ls:40:MET:HG2 | 2.35 | 0.41 |
| 40:L5:2638:G:N1 | 40:L5:2718:U:H2' | 2.35 | 0.41 |
| 40:L5:3821:A:H2' | 40:L5:3822:PSU:C6 | 2.55 | 0.41 |
| 40:L5:3832:U:H2' | 40:L5:3833:C:C6 | 2.55 | 0.41 |
| 40:L5:3953:G:N2 | 40:L5:4059:C:O2' | 2.53 | 0.41 |
| 40:L5:4475:G:OP1 | 50:LH:173:ARG:NH1 | 2.49 | 0.41 |
| 40:L5:4540:C:H2' | 40:L5:4541:G:C8 | 2.55 | 0.41 |
| 40:L5:4622:A:H2' | 40:L5:4623:OMG:C8 | 2.55 | 0.41 |
| 41:L7:92:C:H2' | 41:L7:93:G:C8 | 2.47 | 0.41 |
| 41:L7:112:U:H2' | 41:L7:113:G:H8 | 1.85 | 0.41 |
| 46:LD:164:LYS:HG2 | 46:LD:195:HIS:CE1 | 2.55 | 0.41 |
| 58:LQ:27:LEU:HD23 | 58:LQ:27:LEU:HA | 1.93 | 0.41 |
| 77:Ll:48:LYS:HD2 | 77:Ll:48:LYS:HA | 1.84 | 0.41 |
| 3:SC:82:TYR:CZ | 3:SC:164:PRO:HD3 | 2.55 | 0.41 |
| 4:SE:29:PRO:HA | 19:S2:496:C:H5' | 2.02 | 0.41 |
| 9:SL:28:THR:HA | 9:SL:29:GLY:HA2 | 1.80 | 0.41 |
| 15:SY:124:ASN:HD22 | 19:S2:84:A:H5" | 1.86 | 0.41 |
| 19:S2:15:U:H2' | 19:S2:16:G:O4' | 2.20 | 0.41 |
| 19:S2:62:G:O2' | 19:S2:172:OMU:OP1 | 2.37 | 0.41 |
| 19:S2:573:U:H1' | 19:S2:576:A2M:N7 | 2.36 | 0.41 |
| 19:S2:604:A:H1' | 19:S2:639:C:O2' | 2.20 | 0.41 |
| 19:S2:956:G:H2' | 19:S2:957:A:H8 | 1.84 | 0.41 |
| 19:S2:1101:U:H2' | 19:S2:1102:G:H8 | 1.85 | 0.41 |
| 19:S2:1203:G:H2' | 19:S2:1204:A:H8 | 1.85 | 0.41 |
| 19:S2:1464:C:H4' | 22:SR:60:ARG:NH1 | 2.34 | 0.41 |
| 19:S2:1608:U:H3 | 19:S2:1631:U:H3 | 1.68 | 0.41 |
| 22:SR:35:CYS:HA | 22:SR:38:ILE:HG12 | 2.03 | 0.41 |
| 34:Sd:3:HIS:HD1 | 34:Sd:5:GLN:H | 1.68 | 0.41 |
| 36:Sg:206:LEU:HD12 | 36:Sg:218:LEU:HB3 | 2.01 | 0.41 |
| 40:L5:6:C:H2' | 40:L5:7:C:H6 | 1.84 | 0.41 |
| 40:L5:480:C:H2' | 40:L5:481:G:C8 | 2.55 | 0.41 |
| 40:L5:718:C:H2' | 40:L5:719:C:O4' | 2.19 | 0.41 |
| 40:L5:1194:G:H2' | 40:L5:1195:G:C8 | 2.55 | 0.41 |
| 40:L5:1251:C:H2' | 40:L5:1252:C:C6 | 2.54 | 0.41 |
| 40:L5:1874:A:H2' | 40:L5:1875:C:C6 | 2.55 | 0.41 |
| 40:L5:2770:C:H2' | 40:L5:2771:G:C8 | 2.55 | 0.41 |
| 40:L5:4070:U:H2' | 40:L5:4071:U:H6 | 1.85 | 0.41 |
| 40:L5:4192:A:H2' | 40:L5:4193:C:H6 | 1.85 | 0.41 |
| 40:L5:4941:G:H2' | 40:L5:4942:C:C6 | 2.54 | 0.41 |
| 44:LB:80:GLU:OE1 | 44:LB:323:TYR:OH | 2.31 | 0.41 |
| 45:LC:368:LYS:HA | 45:LC:368:LYS:HD3 | 1.90 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 46:LD:37:VAL:HB | 46:LD:67:ALA:HB2 | 2.02 | 0.41 |
| 47:LE:222:LEU:N | 47:LE:237:LYS:HE2 | 2.35 | 0.41 |
| 49:LG:167:VAL:HG12 | 49:LG:170:LEU:HD12 | 2.02 | 0.41 |
| 53:LL:103:ARG:H | 53:LL:103:ARG:HD3 | 1.84 | 0.41 |
| 80:Lo:24:THR:HA | 80:Lo:93:LEU:HD21 | 2.02 | 0.41 |
| 83:Ls:82:ILE:HG23 | 83:Ls:86:VAL:HG23 | 2.02 | 0.41 |
| 15:SY:68:LYS:HE2 | 15:SY:68:LYS:HB3 | 1.91 | 0.41 |
| 16:Sa:34:LYS:NZ | 19:S2:1862:G:O6 | 2.52 | 0.41 |
| 19:S2:12:U:H2' | 19:S2:13:C:H6 | 1.86 | 0.41 |
| 19:S2:939:U:H2' | 19:S2:940:U:C6 | 2.55 | 0.41 |
| 19:S2:1328:OMG:HM23 | 19:S2:1328:OMG:H1' | 1.71 | 0.41 |
| 19:S2:1383:A2M:HM'3 | 19:S2:1383:A2M:H1' | 1.61 | 0.41 |
| 19:S2:1415:C:H2' | 19:S2:1416:C:H6 | 1.85 | 0.41 |
| 19:S2:1628:C:H2' | 19:S2:1629:C:C6 | 2.55 | 0.41 |
| 29:SS:26:ILE:HD13 | 29:SS:56:ALA:HA | 2.02 | 0.41 |
| 36:Sg:215:GLN:HA | 36:Sg:231:ASP:HA | 2.02 | 0.41 |
| 38:Pt:4:U:H2' | 38:Pt:5:C:C6 | 2.55 | 0.41 |
| 40:L5:68:U:OP1 | 55:LN:178:HIS:ND1 | 2.46 | 0.41 |
| 40:L5:92:C:C2 | 66:La:55:LYS:HE2 | 2.55 | 0.41 |
| 40:L5:425:U:H2' | 40:L5:426:A:C8 | 2.55 | 0.41 |
| 40:L5:1472:C:H2' | 40:L5:1473:U:C6 | 2.55 | 0.41 |
| 40:L5:1494:U:H2' | 40:L5:1495:G:H8 | 1.84 | 0.41 |
| 40:L5:1727:U:H2' | 40:L5:1728:U:H6 | 1.85 | 0.41 |
| 40:L5:2050:G:H2' | 40:L5:2051:C:C6 | 2.56 | 0.41 |
| 40:L5:2419:C:H2' | 40:L5:2420:A:H8 | 1.85 | 0.41 |
| 40:L5:2458:C:H5" | 55:LN:67:ARG:HD2 | 2.01 | 0.41 |
| 40:L5:2691:U:H2' | 40:L5:2692:U:H6 | 1.85 | 0.41 |
| 40:L5:3588:C:H2' | 40:L5:3589:G:O4' | 2.20 | 0.41 |
| 40:L5:3891:A:O2' | 57:LP:64:ASN:ND2 | 2.53 | 0.41 |
| 40:L5:4127:A:H62 | 40:L5:4157:A:H62 | 1.68 | 0.41 |
| 40:L5:4281:A:H2' | 40:L5:4282:A:H2' | 2.01 | 0.41 |
| 40:L5:4457:PSU:O4 | 44:LB:252:ALA:HB3 | 2.20 | 0.41 |
| 65:LZ:38:TYR:CE1 | 65:LZ:40:HIS:HB3 | 2.55 | 0.41 |
| 1:SA:52:LYS:HB2 | 22:SR:109:LEU:HD13 | 2.03 | 0.41 |
| 1:SA:184:ARG:HB3 | 1:SA:191:ARG:NE | 2.33 | 0.41 |
| 8:SJ:18:ARG:NH2 | 19:S2:4:C:H1' | 2.35 | 0.41 |
| 19:S2:1255:G:OP1 | 19:S2:1256:G:O2' | 2.30 | 0.41 |
| 19:S2:1495:G:H2' | 19:S2:1496:U:C6 | 2.55 | 0.41 |
| 20:LR:60:ARG:NH1 | 40:L5:2808:G:O3' | 2.53 | 0.41 |
| 21:LW:81:ALA:HB2 | 21:LW:87:LEU:HB2 | 2.01 | 0.41 |
| 21:LW:102:LYS:HA | 21:LW:105:ARG:HE | 1.85 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 23:SD:193:ASP:OD2 | 23:SD:198:ILE:HG12 | 2.21 | 0.41 |
| 28:SQ:17:LYS:HE2 | 28:SQ:17:LYS:HB3 | 1.95 | 0.41 |
| 31:SU:19:ARG:O | 31:SU:117:ALA:N | 2.49 | 0.41 |
| 32:SZ:65:TYR:C | 32:SZ:111:ARG:HD3 | 2.44 | 0.41 |
| 40:L5:44:A:N3 | 40:L5:94:A:H2 | 2.18 | 0.41 |
| 40:L5:399:G:N2 | 57:LP:101:ASN:OD1 | 2.51 | 0.41 |
| 40:L5:434:A:H3' | 40:L5:435:A:H8 | 1.85 | 0.41 |
| 40:L5:665:C:H4' | 40:L5:666:G:H5' | 2.02 | 0.41 |
| 40:L5:1100:U:O4 | 40:L5:1194:G:O6 | 2.39 | 0.41 |
| 40:L5:1408:G:O2' | 40:L5:1411:C:N4 | 2.54 | 0.41 |
| 40:L5:1503:A:H1' | 40:L5:1504:G:C8 | 2.55 | 0.41 |
| 40:L5:1669:A:C2 | 40:L5:1852:U:H4' | 2.56 | 0.41 |
| 40:L5:2078:C:H2' | 40:L5:2079:G:C8 | 2.55 | 0.41 |
| 40:L5:2358:G:H2' | 40:L5:2359:U:O4' | 2.19 | 0.41 |
| 40:L5:2421:G:H8 | 57:LP:139:TYR:CZ | 2.38 | 0.41 |
| 40:L5:3718:A2M:HM'3 | 40:L5:3718:A2M:H1' | 1.70 | 0.41 |
| 40:L5:3744:OMG:HM23 | 40:L5:3744:OMG:H1' | 1.74 | 0.41 |
| 40:L5:3871:A:H2' | 40:L5:3872:A:H8 | 1.85 | 0.41 |
| 40:L5:3952:A:H2' | 40:L5:3953:G:C8 | 2.56 | 0.41 |
| 40:L5:4383:U:H2' | 40:L5:4384:U:C6 | 2.55 | 0.41 |
| 40:L5:4617:G:OP1 | 44:LB:62:ARG:NH1 | 2.54 | 0.41 |
| 40:L5:4965:U:H4' | 40:L5:4966:A:H5' | 2.03 | 0.41 |
| 41:L7:5:A:O2' | 46:LD:63:GLN:OE1 | 2.29 | 0.41 |
| 41:L7:35:U:O2 | 41:L7:45:U:O2' | 2.38 | 0.41 |
| 55:LN:35:ALA:HA | 55:LN:65:ARG:HB3 | 2.01 | 0.41 |
| 62:LV:69:LYS:HB2 | 62:LV:72:LEU:HD12 | 2.01 | 0.41 |
| 1:SA:210:ILE:HD11 | 22:SR:80:ARG:HB3 | 2.02 | 0.41 |
| 2:SB:128:LYS:HE2 | 2:SB:219:LYS:HD3 | 2.02 | 0.41 |
| 2:SB:175:GLU:HB3 | 2:SB:187:LYS:HZ1 | 1.84 | 0.41 |
| 2:SB:228:LEU:HD12 | 2:SB:231:LEU:HD11 | 2.02 | 0.41 |
| 3:SC:60:TRP:CE2 | 3:SC:92:GLU:HB2 | 2.55 | 0.41 |
| 6:SH:46:THR:OG1 | 6:SH:97:GLN:NE2 | 2.52 | 0.41 |
| 16:Sa:60:ASP:OD1 | 16:Sa:61:ALA:N | 2.52 | 0.41 |
| 19:S2:352:U:H2' | 19:S2:353:C:C6 | 2.55 | 0.41 |
| 19:S2:482:G:N2 | 19:S2:484:A2M:H3' | 2.36 | 0.41 |
| 19:S2:1726:G:H1 | 19:S2:1808:U:H3 | 1.67 | 0.41 |
| 19:S2:1816:G:O2' | 40:L5:3807:A:O2' | 2.15 | 0.41 |
| 40:L5:5:A:H1' | 49:LG:192:ARG:HH21 | 1.85 | 0.41 |
| 40:L5:302:C:H2' | 40:L5:303:C:C6 | 2.55 | 0.41 |
| 40:L5:443:G:H2' | 40:L5:444:G:C8 | 2.55 | 0.41 |
| 40:L5:751:G:H2' | 40:L5:752:G:O4' | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:L5:1443:A:H2' | 40:L5:1444:G:C8 | 2.56 | 0.41 |
| 40:L5:1486:C:H2' | 40:L5:1487:G:H8 | 1.86 | 0.41 |
| 40:L5:2000:G:H4' | 40:L5:2001:G:C8 | 2.55 | 0.41 |
| 40:L5:2648:G:H2' | 40:L5:2649:G:C8 | 2.56 | 0.41 |
| 40:L5:2723:U:H2' | 40:L5:2724:G:C8 | 2.56 | 0.41 |
| 40:L5:2888:G:H2' | 40:L5:2889:G:H8 | 1.85 | 0.41 |
| 40:L5:4478:G:N2 | 40:L5:4608:G:O2' | 2.52 | 0.41 |
| 40:L5:4524:G:H2' | 40:L5:4525:C:C6 | 2.56 | 0.41 |
| 40:L5:4947:U:H2' | 40:L5:4948:C:C6 | 2.55 | 0.41 |
| 41:L7:15:C:H2' | 41:L7:16:A:H8 | 1.86 | 0.41 |
| 41:L7:16:A:H2' | 41:L7:17:C:C6 | 2.56 | 0.41 |
| 42:L8:15:G:H2' | 42:L8:16:G:C4 | 2.56 | 0.41 |
| 45:LC:5:ARG:HB3 | 45:LC:24:LEU:HB3 | 2.02 | 0.41 |
| 48:LF:50:ILE:HD12 | 48:LF:186:CYS:HB3 | 2.03 | 0.41 |
| 59:LS:70:LYS:HD3 | 59:LS:70:LYS:HA | 1.85 | 0.41 |
| 4:SE:55:ALA:HB1 | 4:SE:60:GLU:HB2 | 2.03 | 0.41 |
| 7:SI:25:ARG:HH22 | 19:S2:434:G:P | 2.44 | 0.41 |
| 19:S2:16:G:H5' | 19:S2:669:A:N6 | 2.35 | 0.41 |
| 19:S2:155:G:H2' | 19:S2:156:G:H8 | 1.85 | 0.41 |
| 19:S2:788:G:O2' | 19:S2:789:G:H5" | 2.21 | 0.41 |
| 19:S2:806:U:H2' | 19:S2:807:G:C8 | 2.54 | 0.41 |
| 19:S2:1422:G:H4' | 19:S2:1423:C:H3' | 2.02 | 0.41 |
| 19:S2:1501:C:H2' | 19:S2:1502:C:C6 | 2.56 | 0.41 |
| 19:S2:1528:G:H2' | 19:S2:1529:C:C6 | 2.56 | 0.41 |
| 23:SD:8:LYS:HB3 | 31:SU:61:LEU:HD21 | 2.02 | 0.41 |
| 23:SD:135:GLU:HB2 | 23:SD:153:VAL:HG23 | 2.01 | 0.41 |
| 25:SK:97:SER:C | 25:SK:98:ARG:HD2 | 2.46 | 0.41 |
| 28:SQ:73:LYS:HD2 | 28:SQ:73:LYS:HA | 1.78 | 0.41 |
| 36:Sg:185:LYS:HA | 36:Sg:185:LYS:HD2 | 1.83 | 0.41 |
| 37:At:51:C:H2' | 37:At:52:G:C8 | 2.56 | 0.41 |
| 37:At:53:G:N1 | 37:At:62:C:N3 | 2.69 | 0.41 |
| 38:Pt:72:C:H2' | 38:Pt:73:A:C8 | 2.56 | 0.41 |
| 40:L5:494:U:H2' | 40:L5:495:C:C6 | 2.55 | 0.41 |
| 40:L5:1688:G:H2' | 40:L5:1689:G:C8 | 2.55 | 0.41 |
| 40:L5:2384:U:H2' | 40:L5:2385:U:C6 | 2.55 | 0.41 |
| 40:L5:2402:G:H2' | 40:L5:2403:A:H8 | 1.85 | 0.41 |
| 40:L5:3616:U:H4' | 40:L5:3617:G:H5' | 2.02 | 0.41 |
| 40:L5:4097:G:N7 | 40:L5:4098:A:N6 | 2.69 | 0.41 |
| 40:L5:4573:G:H2' | 40:L5:4574:U:C6 | 2.55 | 0.41 |
| 40:L5:5002:U:H2' | 40:L5:5003:U:C6 | 2.56 | 0.41 |
| 46:LD:41:LYS:HB2 | 60:LT:68:THR:O | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:LF:240:ILE:HD12 | 48:LF:240:ILE:HA | 1.92 | 0.41 |
| 58:LQ:86:ILE:HD12 | 58:LQ:105:VAL:HG22 | 2.03 | 0.41 |
| 60:LT:108:ARG:NH2 | 60:LT:130:ARG:HH21 | 2.18 | 0.41 |
| 82:Lr:46:ARG:CZ | 82:Lr:70:GLN:HG3 | 2.50 | 0.41 |
| 4:SE:187:ALA:H | 19:S2:809:A:P | 2.43 | 0.41 |
| 10:SN:84:LEU:HD23 | 10:SN:84:LEU:HA | 1.92 | 0.41 |
| 16:Sa:23:CYS:HB3 | 16:Sa:28:ARG:H | 1.86 | 0.41 |
| 16:Sa:33:ASP:OD1 | 16:Sa:34:LYS:N | 2.53 | 0.41 |
| 19:S2:29:G:H2' | 19:S2:30:C:H6 | 1.86 | 0.41 |
| 19:S2:85:A:H2' | 19:S2:86:C:C6 | 2.55 | 0.41 |
| 19:S2:94:G:O2' | 19:S2:508:A:O2' | 2.25 | 0.41 |
| 19:S2:118:C:H1' | 19:S2:445:A:C5 | 2.56 | 0.41 |
| 19:S2:456:C:H2' | 19:S2:457:C:C6 | 2.56 | 0.41 |
| 19:S2:946:U:H2' | 19:S2:947:G:C8 | 2.55 | 0.41 |
| 23:SD:202:LYS:HE3 | 23:SD:202:LYS:HB2 | 1.86 | 0.41 |
| 24:SF:122:ARG:HG3 | 33:Sc:57:THR:HG21 | 2.03 | 0.41 |
| 40:L5:1426:G:N1 | 40:L5:1458:C:OP2 | 2.38 | 0.41 |
| 40:L5:1427:A:OP2 | 40:L5:1457:G:N1 | 2.49 | 0.41 |
| 40:L5:1617:G:H1' | 40:L5:2513:A:N6 | 2.36 | 0.41 |
| 40:L5:1646:A:H2' | 40:L5:1647:U:C6 | 2.55 | 0.41 |
| 40:L5:1703:C:H41 | 48:LF:39:GLN:NE2 | 2.19 | 0.41 |
| 40:L5:1848:C:H2' | 40:L5:1849:U:O4' | 2.20 | 0.41 |
| 40:L5:2029:A:H2' | 40:L5:2030:A:C8 | 2.55 | 0.41 |
| 40:L5:2081:C:H2' | 40:L5:2082:G:H8 | 1.85 | 0.41 |
| 40:L5:2374:A:H2' | 40:L5:2375:A:H8 | 1.86 | 0.41 |
| 40:L5:2519:U:H1' | 40:L5:2520:C:C6 | 2.56 | 0.41 |
| 40:L5:2735:G:H2' | 40:L5:2736:G:H8 | 1.85 | 0.41 |
| 40:L5:3813:A:N3 | 40:L5:4538:G:O2' | 2.46 | 0.41 |
| 40:L5:3920:PSU:H2' | 40:L5:3921:U:H6 | 1.85 | 0.41 |
| 40:L5:4177:C:H2' | 40:L5:4178:A:C8 | 2.52 | 0.41 |
| 40:L5:4210:U:H3 | 40:L5:4222:G:H1 | 1.68 | 0.41 |
| 40:L5:4318:C:H4' | 80:Lo:17:LYS:HA | 2.02 | 0.41 |
| 40:L5:4592:C:H2' | 40:L5:4593:C:C6 | 2.56 | 0.41 |
| 40:L5:4759:C:OP1 | 56:LO:116:LYS:NZ | 2.40 | 0.41 |
| 40:L5:4767:C:H2' | 40:L5:4768:G:C8 | 2.56 | 0.41 |
| 49:LG:230:TYR:HA | 49:LG:233:ILE:HD12 | 2.02 | 0.41 |
| 58:LQ:88:ASP:HB2 | 58:LQ:109:ALA:HB2 | 2.02 | 0.41 |
| 58:LQ:154:LYS:HB3 | 58:LQ:154:LYS:HE2 | 1.89 | 0.41 |
| 1:SA:42:LYS:HG3 | 1:SA:44:ASP:H | 1.85 | 0.41 |
| 1:SA:155:ARG:HH22 | 19:S2:1137:U:H4' | 1.85 | 0.41 |
| 6:SH:33:ASN:ND2 | 6:SH:37:LYS:HG2 | 2.36 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 8:SJ:77:LEU:HA | 8:SJ:80:ARG:HE | 1.85 | 0.41 |
| 11:SO:65:ASP:HB3 | 19:S2:963:A:OP1 | 2.21 | 0.41 |
| 19:S2:323:C:H5' | 19:S2:324:C:OP1 | 2.21 | 0.41 |
| 19:S2:1269:G:H2' | 19:S2:1270:G:C8 | 2.56 | 0.41 |
| 19:S2:1661:A:OP2 | 34:Sd:32:ARG:NH2 | 2.46 | 0.41 |
| 20:LR:82:LYS:HA | 20:LR:82:LYS:HD2 | 1.95 | 0.41 |
| 35:Sf:103:LEU:HB2 | 35:Sf:105:TYR:CD2 | 2.55 | 0.41 |
| 36:Sg:88:ARG:HG2 | 36:Sg:97:THR:HG21 | 2.02 | 0.41 |
| 36:Sg:159:ASN:ND2 | 36:Sg:162:ASN:OD1 | 2.54 | 0.41 |
| 40:L5:123:C:H2' | 40:L5:124:C:C6 | 2.55 | 0.41 |
| 40:L5:139:G:H2' | 40:L5:140:G:C8 | 2.54 | 0.41 |
| 40:L5:1198:G:H2' | 40:L5:1199:G:H8 | 1.86 | 0.41 |
| 40:L5:1366:G:H4' | 40:L5:1367:C:OP1 | 2.20 | 0.41 |
| 40:L5:2386:U:H2' | 40:L5:2387:G:H8 | 1.85 | 0.41 |
| 40:L5:2817:C:H2' | 40:L5:2818:C:H6 | 1.85 | 0.41 |
| 40:L5:2856:C:H2' | 40:L5:2857:A:O4' | 2.21 | 0.41 |
| 40:L5:3608:A:H2' | 40:L5:3609:G:C8 | 2.56 | 0.41 |
| 40:L5:3819:G:H2' | 40:L5:3820:G:C8 | 2.55 | 0.41 |
| 40:L5:3856:A:H5" | 57:LP:83:TRP:O | 2.21 | 0.41 |
| 40:L5:4348:A:C6 | 40:L5:4350:C:C4 | 3.08 | 0.41 |
| 40:L5:4642:U:H2' | 40:L5:4643:G:H8 | 1.84 | 0.41 |
| 40:L5:4761:G:H5" | 56:LO:12:ARG:CZ | 2.50 | 0.41 |
| 40:L5:4927:G:H5" | 40:L5:4928:C:H5 | 1.85 | 0.41 |
| 41:L7:75:G:N2 | 41:L7:100:A:OP2 | 2.52 | 0.41 |
| 44:LB:103:LYS:HD3 | 44:LB:103:LYS:HA | 1.92 | 0.41 |
| 45:LC:138:MET:HE3 | 45:LC:138:MET:HB3 | 1.97 | 0.41 |
| 47:LE:222:LEU:H | 47:LE:237:LYS:HE2 | 1.85 | 0.41 |
| 47:LE:239:LYS:HA | 47:LE:239:LYS:HD2 | 1.90 | 0.41 |
| 50:LH:51:LYS:HE2 | 50:LH:54:ARG:HH12 | 1.85 | 0.41 |
| 67:Lb:43:MET:HE2 | 67:Lb:43:MET:HB3 | 1.87 | 0.41 |
| 2:SB:38:MET:HG2 | 2:SB:38:MET:H | 1.68 | 0.41 |
| 3:SC:131:GLY:HA3 | 3:SC:137:VAL:HA | 2.02 | 0.41 |
| 3:SC:184:VAL:HG23 | 3:SC:243:ALA:HB1 | 2.03 | 0.41 |
| 5:SG:218:LYS:HD2 | 5:SG:218:LYS:HA | 1.84 | 0.41 |
| 7:SI:10:LYS:HD3 | 19:S2:387:C:P | 2.60 | 0.41 |
| 7:SI:130:THR:N | 7:SI:131:PRO:HD2 | 2.36 | 0.41 |
| 8:SJ:104:ASP:O | 8:SJ:108:ARG:HG2 | 2.20 | 0.41 |
| 8:SJ:152:ASP:OD1 | 8:SJ:153:SER:N | 2.53 | 0.41 |
| 11:SO:124:MET:HE3 | 11:SO:124:MET:HB2 | 1.99 | 0.41 |
| 13:SW:6:VAL:HG21 | 19:S2:685:A:H5' | 2.03 | 0.41 |
| 15:SY:93:ARG:HH21 | 19:S2:575:A:P | 2.43 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:63:U:O2' | 19:S2:170:A:N3 | 2.46 | 0.41 |
| 19:S2:602:G:OP2 | 19:S2:603:C:O2' | 2.33 | 0.41 |
| 19:S2:666:U:H2' | 19:S2:667:U:C6 | 2.56 | 0.41 |
| 19:S2:1134:G:H2' | 19:S2:1135:C:H6 | 1.86 | 0.41 |
| 19:S2:1172:U:H2' | 19:S2:1173:A:H8 | 1.85 | 0.41 |
| 19:S2:1198:G:H2' | 19:S2:1199:A:C8 | 2.55 | 0.41 |
| 19:S2:1232:PSU:H2' | 19:S2:1233:G:H8 | 1.86 | 0.41 |
| 19:S2:1731:A:H2' | 19:S2:1732:G:C8 | 2.56 | 0.41 |
| 19:S2:1733:U:H2' | 19:S2:1734:G:O4' | 2.21 | 0.41 |
| 19:S2:1858:G:H2' | 19:S2:1859:A:C8 | 2.52 | 0.41 |
| 20:LR:135:LYS:HG3 | 20:LR:136:ARG:N | 2.32 | 0.41 |
| 20:LR:148:ASP:HA | 20:LR:151:ARG:HB3 | 2.02 | 0.41 |
| 21:LW:87:LEU:HD12 | 21:LW:90:ILE:HD11 | 2.03 | 0.41 |
| 22:SR:41:ILE:HA | 23:SD:208:VAL:HG12 | 2.03 | 0.41 |
| 24:SF:42:LYS:HD3 | 24:SF:42:LYS:HA | 1.62 | 0.41 |
| 24:SF:91:ARG:O | 24:SF:95:HIS:ND1 | 2.54 | 0.41 |
| 30:ST:40:ALA:HB3 | 30:ST:43:LYS:HG3 | 2.02 | 0.41 |
| 36:Sg:31:ILE:HG13 | 36:Sg:43:TRP:HB2 | 2.02 | 0.41 |
| 37:At:22:U:H2' | 37:At:23:C:H6 | 1.86 | 0.41 |
| 40:L5:25:A:C8 | 40:L5:341:G:C8 | 3.09 | 0.41 |
| 40:L5:288:G:H2' | 40:L5:289:C:H6 | 1.85 | 0.41 |
| 40:L5:364:G:O2' | 40:L5:375:G:O6 | 2.36 | 0.41 |
| 40:L5:393:U:O2 | 57:LP:97:ASN:ND2 | 2.53 | 0.41 |
| 40:L5:426:A:H2' | 40:L5:427:A:H8 | 1.86 | 0.41 |
| 40:L5:711:A:H2' | 40:L5:712:C:C6 | 2.56 | 0.41 |
| 40:L5:958:G:N2 | 47:LE:124:LYS:HB3 | 2.35 | 0.41 |
| 40:L5:1084:C:H2' | 40:L5:1085:C:H6 | 1.85 | 0.41 |
| 40:L5:1825:A:H2' | 40:L5:1826:G:C8 | 2.56 | 0.41 |
| 40:L5:1921:C:C4 | 59:LS:161:ARG:HD2 | 2.56 | 0.41 |
| 40:L5:1942:A:H4' | 41:L7:88:A:N1 | 2.36 | 0.41 |
| 40:L5:2045:G:O6 | 40:L5:3870:C:O2' | 2.39 | 0.41 |
| 40:L5:2107:C:N4 | 40:L5:2108:G:O6 | 2.54 | 0.41 |
| 40:L5:2533:C:H2' | 40:L5:2534:C:C6 | 2.55 | 0.41 |
| 40:L5:2599:G:N2 | 40:L5:2747:U:O4 | 2.54 | 0.41 |
| 40:L5:3833:C:H2' | 40:L5:3834:C:C6 | 2.56 | 0.41 |
| 40:L5:4364:G:H2' | 40:L5:4365:C:H6 | 1.85 | 0.41 |
| 40:L5:4716:C:H5" | 44:LB:276:HIS:O | 2.21 | 0.41 |
| 40:L5:4896:G:H2' | 40:L5:4897:G:C8 | 2.55 | 0.41 |
| 40:L5:4911:A:OP1 | 44:LB:97:ARG:NH2 | 2.46 | 0.41 |
| 40:L5:5002:U:H2' | 40:L5:5003:U:H6 | 1.85 | 0.41 |
| 40:L5:5058:A:H4' | 69:Ld:23:ARG:HH22 | 1.86 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 41:L7:3:C:H2' | 41:L7:4:U:C6 | 2.56 | 0.41 |
| 41:L7:3:C:H2' | 41:L7:4:U:H6 | 1.86 | 0.41 |
| 43:LA:117:GLU:HB2 | 43:LA:162:ASN:HB3 | 2.02 | 0.41 |
| 46:LD:42:ASN:HD21 | 60:LT:69:GLN:NE2 | 2.18 | 0.41 |
| 47:LE:96:VAL:HG11 | 47:LE:105:ARG:NH1 | 2.34 | 0.41 |
| 47:LE:144:ILE:HG12 | 47:LE:196:ALA:HB2 | 2.03 | 0.41 |
| 54:LM:123:ILE:HD13 | 56:LO:182:GLU:HG2 | 2.02 | 0.41 |
| 56:LO:124:LEU:HD23 | 56:LO:124:LEU:HA | 1.96 | 0.41 |
| 65:LZ:60:LYS:HE2 | 65:LZ:60:LYS:HB2 | 1.97 | 0.41 |
| 68:Lc:52:CYS:HB3 | 68:Lc:57:LYS:HE2 | 2.02 | 0.41 |
| 69:Ld:114:PHE:HA | 69:Ld:117:LEU:HD12 | 2.02 | 0.41 |
| 6:SH:91:HIS:ND1 | 6:SH:172:THR:HG21 | 2.35 | 0.41 |
| 6:SH:158:LEU:HD23 | 6:SH:158:LEU:HA | 1.94 | 0.41 |
| 7:SI:139:LYS:HE2 | 7:SI:139:LYS:HB2 | 1.86 | 0.41 |
| 8:SJ:115:PHE:HA | 8:SJ:120:ALA:HB3 | 2.03 | 0.41 |
| 19:S2:323:C:H2' | 19:S2:327:G:H22 | 1.86 | 0.41 |
| 19:S2:1362:U:H5" | 19:S2:1363:C:H5 | 1.86 | 0.41 |
| 19:S2:1567:G:H2' | 19:S2:1568:C:C6 | 2.55 | 0.41 |
| 19:S2:1803:U:H2' | 19:S2:1804:U:H6 | 1.85 | 0.41 |
| 19:S2:1803:U:H2' | 19:S2:1804:U:C6 | 2.55 | 0.41 |
| 20:LR:59:SER:HA | 40:L5:2634:C:H5' | 2.03 | 0.41 |
| 24:SF:31:ASN:OD1 | 24:SF:32:ASP:N | 2.54 | 0.41 |
| 25:SK:63:ALA:HB2 | 25:SK:68:TYR:CE2 | 2.56 | 0.41 |
| 32:SZ:99:LEU:HD21 | 32:SZ:102:LYS:HB2 | 2.03 | 0.41 |
| 36:Sg:30:MET:HE3 | 36:Sg:30:MET:HB3 | 1.90 | 0.41 |
| 36:Sg:270:LEU:HD13 | 36:Sg:310:TRP:CD2 | 2.56 | 0.41 |
| 38:Pt:5:C:H2' | 38:Pt:6:C:C6 | 2.57 | 0.41 |
| 40:L5:229:G:H2' | 40:L5:230:G:C8 | 2.56 | 0.41 |
| 40:L5:480:C:H2' | 40:L5:481:G:H8 | 1.86 | 0.41 |
| 40:L5:708:G:OP1 | 71:Lf:89:ARG:NH1 | 2.54 | 0.41 |
| 40:L5:1464:C:H5" | 67:Lb:32:LEU:HD12 | 2.02 | 0.41 |
| 40:L5:1513:U:H2' | 40:L5:1514:U:H6 | 1.86 | 0.41 |
| 40:L5:1577:G:H5' | 40:L5:1578:U:H5" | 2.03 | 0.41 |
| 40:L5:1667:G:N2 | 40:L5:2282:A:H62 | 2.18 | 0.41 |
| 40:L5:2422:OMC:O5' | 40:L5:2422:OMC:H6 | 2.04 | 0.41 |
| 40:L5:2539:C:H2' | 40:L5:2540:C:H6 | 1.84 | 0.41 |
| 40:L5:2605:G:H2' | 40:L5:2606:G:H8 | 1.84 | 0.41 |
| 40:L5:2876:OMG:HM22 | 40:L5:2877:G:H5' | 2.02 | 0.41 |
| 40:L5:4456:OMC:HM23 | 40:L5:4456:OMC:H1' | 1.86 | 0.41 |
| 41:L7:75:G:H1' | 41:L7:76:U:H5 | 1.85 | 0.41 |
| 43:LA:183:GLY:HA2 | 43:LA:186:TYR:HB3 | 2.03 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:LF:226:HIS:HB3 | 48:LF:229:GLU:HG2 | 2.03 | 0.41 |
| 53:LL:65:ARG:HG3 | 66:La:69:PHE:CD2 | 2.56 | 0.41 |
| 57:LP:37:LYS:HE2 | 57:LP:37:LYS:HB3 | 1.83 | 0.41 |
| 1:SA:189:ILE:HG22 | 1:SA:191:ARG:H | 1.86 | 0.40 |
| 5:SG:7:PHE:CD1 | 5:SG:10:THR:HG22 | 2.56 | 0.40 |
| 7:SI:99:ASN:HB2 | 19:S2:377:G:O5' | 2.22 | 0.40 |
| 8:SJ:63:LEU:HD12 | 8:SJ:63:LEU:HA | 1.88 | 0.40 |
| 8:SJ:163:SER:HA | 8:SJ:164:PRO:HD3 | 1.92 | 0.40 |
| 13:SW:57:ARG:HD2 | 19:S2:919:A:H4' | 2.03 | 0.40 |
| 19:S2:21:U:H2' | 19:S2:22:A:H8 | 1.85 | 0.40 |
| 19:S2:615:C:H2' | 19:S2:616:A:O4' | 2.22 | 0.40 |
| 19:S2:1088:U:H4' | 19:S2:1089:G:OP2 | 2.21 | 0.40 |
| 19:S2:1359:U:H2' | 19:S2:1360:U:H6 | 1.86 | 0.40 |
| 19:S2:1410:C:H2' | 19:S2:1411:G:H8 | 1.85 | 0.40 |
| 21:LW:2:LYS:HE2 | 44:LB:71:GLU:HB3 | 2.03 | 0.40 |
| 21:LW:52:THR:HG22 | 21:LW:54:LEU:H | 1.85 | 0.40 |
| 23:SD:109:LEU:HD22 | 23:SD:115:VAL:HG12 | 2.03 | 0.40 |
| 38:Pt:5:C:H2' | 38:Pt:6:C:H6 | 1.86 | 0.40 |
| 40:L5:303:C:H2' | 40:L5:304:C:C6 | 2.56 | 0.40 |
| 40:L5:1211:G:H2' | 40:L5:1212:G:C8 | 2.56 | 0.40 |
| 40:L5:1473:U:H2' | 40:L5:1474:C:C6 | 2.55 | 0.40 |
| 40:L5:1494:U:H2' | 40:L5:1495:G:C8 | 2.56 | 0.40 |
| 40:L5:1517:G:H22 | 45:LC:103:ALA:HA | 1.87 | 0.40 |
| 40:L5:1779:U:H2' | 40:L5:1780:A:H8 | 1.86 | 0.40 |
| 40:L5:1819:G:H1' | 46:LD:115:MET:HE1 | 2.03 | 0.40 |
| 40:L5:1978:C:H2' | 40:L5:1979:A:C8 | 2.56 | 0.40 |
| 40:L5:2274:C:H2' | 40:L5:2275:G:C8 | 2.56 | 0.40 |
| 40:L5:2344:U:O4 | 66:La:3:SER:OG | 2.34 | 0.40 |
| 40:L5:2517:A:H5' | 72:Lg:62:LYS:HD3 | 2.03 | 0.40 |
| 40:L5:2780:C:H2' | 40:L5:2781:G:C8 | 2.46 | 0.40 |
| 40:L5:3702:A:C6 | 40:L5:3774:A:C6 | 3.09 | 0.40 |
| 40:L5:3723:A:H2' | 40:L5:3724:A:H8 | 1.85 | 0.40 |
| 40:L5:4392:OMG:HM21 | 40:L5:4394:A:H2' | 2.03 | 0.40 |
| 40:L5:4685:U:H2' | 40:L5:4686:G:H8 | 1.86 | 0.40 |
| 40:L5:4724:A:H2' | 40:L5:4725:C:C6 | 2.56 | 0.40 |
| 40:L5:4883:C:H2' | 40:L5:4884:G:H8 | 1.86 | 0.40 |
| 44:LB:136:LYS:HE2 | 44:LB:136:LYS:HB3 | 1.88 | 0.40 |
| 44:LB:317:LEU:HB3 | 44:LB:372:SER:HB2 | 2.03 | 0.40 |
| 46:LD:50:ARG:NH1 | 46:LD:147:ASP:OD2 | 2.54 | 0.40 |
| 47:LE:277:LEU:HD23 | 47:LE:277:LEU:HA | 1.90 | 0.40 |
| 53:LL:111:GLN:O | 53:LL:115:GLN:HG2 | 2.21 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 63:LX:74:TYR:CD2 | 73:Lh:25:LYS:HD3 | 2.56 | 0.40 |
| 75:Lj:60:GLY:HA2 | 75:Lj:64:MET:SD | 2.61 | 0.40 |
| 83:Ls:133:GLU:HG2 | 83:Ls:134:LYS:HG2 | 2.02 | 0.40 |
| 3:SC:246:LYS:HB2 | 3:SC:249:SER:HB2 | 2.03 | 0.40 |
| 9:SL:35:ARG:NH2 | 9:SL:55:TYR:O | 2.55 | 0.40 |
| 14:SX:101:LEU:HB3 | 14:SX:124:LYS:HB2 | 2.02 | 0.40 |
| 14:SX:106:GLY:HA2 | 19:S2:648:A:H5" | 2.03 | 0.40 |
| 14:SX:129:SER:HB2 | 19:S2:29:G:H4' | 2.04 | 0.40 |
| 17:Sb:36:LYS:NZ | 17:Sb:40:CYS:O | 2.50 | 0.40 |
| 19:S2:1242:U:O2 | 19:S2:1517:G:O2' | 2.29 | 0.40 |
| 19:S2:1452:A:H5" | 22:SR:48:ASN:HD22 | 1.86 | 0.40 |
| 22:SR:16:ILE:HG22 | 23:SD:210:ILE:HG12 | 2.03 | 0.40 |
| 22:SR:30:THR:O | 22:SR:34:VAL:HG23 | 2.21 | 0.40 |
| 40:L5:18:C:H2' | 40:L5:19:G:C8 | 2.56 | 0.40 |
| 40:L5:919:C:H2' | 40:L5:920:C:H6 | 1.85 | 0.40 |
| 40:L5:1238:A:O2' | 48:LF:52:GLU:OE2 | 2.37 | 0.40 |
| 40:L5:1340:OMC:H1' | 40:L5:1340:OMC:HM23 | 1.74 | 0.40 |
| 40:L5:1734:G:N2 | 40:L5:1735:U:O4 | 2.37 | 0.40 |
| 40:L5:1896:A:OP1 | 48:LF:97:GLY:N | 2.54 | 0.40 |
| 40:L5:2293:U:H2' | 40:L5:2294:G:C8 | 2.56 | 0.40 |
| 40:L5:2622:G:H2' | 40:L5:2623:A:H8 | 1.87 | 0.40 |
| 40:L5:2803:U:H2' | 40:L5:2804:OMC:C6 | 2.56 | 0.40 |
| 40:L5:4277:G:H5" | 60:LT:17:ARG:HG2 | 2.03 | 0.40 |
| 40:L5:4642:U:H2' | 40:L5:4643:G:C8 | 2.57 | 0.40 |
| 42:L8:140:C:H2' | 42:L8:141:C:C6 | 2.57 | 0.40 |
| 49:LG:70:LEU:HD23 | 49:LG:70:LEU:HA | 1.88 | 0.40 |
| 49:LG:87:LEU:HD23 | 49:LG:87:LEU:HA | 1.79 | 0.40 |
| 57:LP:141:SER:OG | 57:LP:142:SER:N | 2.55 | 0.40 |
| 63:LX:65:ALA:HB2 | 73:Lh:69:LEU:HD11 | 2.03 | 0.40 |
| 65:LZ:13:VAL:HA | 65:LZ:80:LEU:HD23 | 2.03 | 0.40 |
| 73:Lh:95:LEU:HB3 | 73:Lh:99:GLU:HG3 | 2.03 | 0.40 |
| 77:Ll:44:TRP:O | 77:Ll:48:LYS:NZ | 2.47 | 0.40 |
| 6:SH:111:LYS:HD2 | 19:S2:796:G:H21 | 1.85 | 0.40 |
| 7:SI:12:ARG:HH21 | 7:SI:18:ARG:HA | 1.86 | 0.40 |
| 10:SN:102:LEU:HD12 | 10:SN:102:LEU:HA | 1.93 | 0.40 |
| 13:SW:44:HIS:NE2 | 13:SW:112:ASP:OD2 | 2.54 | 0.40 |
| 14:SX:56:GLY:HA3 | 18:Se:3:HIS:CE1 | 2.56 | 0.40 |
| 19:S2:448:A:H4' | 19:S2:449:A:H5" | 2.03 | 0.40 |
| 19:S2:884:C:H2' | 19:S2:885:U:O4' | 2.21 | 0.40 |
| 19:S2:942:G:H2' | 19:S2:943:U:C6 | 2.56 | 0.40 |
| 19:S2:1103:C:H2' | 19:S2:1104:G:H8 | 1.84 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:S2:1260:A:C2 | 19:S2:1620:A:C4 | 3.09 | 0.40 |
| 19:S2:1523:C:H2' | 19:S2:1524:G:C8 | 2.55 | 0.40 |
| 19:S2:1531:A:P | 30:ST:84:ARG:HH21 | 2.45 | 0.40 |
| 19:S2:1651:A:H2' | 19:S2:1652:G:C8 | 2.54 | 0.40 |
| 19:S2:1770:G:O3' | 19:S2:1771:G:N2 | 2.47 | 0.40 |
| 20:LR:23:TRP:HB2 | 20:LR:53:LYS:HG3 | 2.03 | 0.40 |
| 20:LR:173:ARG:HG2 | 20:LR:176:ARG:NH2 | 2.36 | 0.40 |
| 23:SD:51:LEU:HD12 | 23:SD:91:VAL:HB | 2.03 | 0.40 |
| 25:SK:18:GLU:HG2 | 25:SK:20:VAL:HG22 | 2.03 | 0.40 |
| 26:SM:71:GLU:CD | 35:Sf:114:ILE:HB | 2.46 | 0.40 |
| 31:SU:69:PRO:O | 34:Sd:40:ARG:NH2 | 2.54 | 0.40 |
| 36:Sg:71:ILE:HG22 | 36:Sg:72:SER:O | 2.21 | 0.40 |
| 40:L5:124:C:H2' | 40:L5:125:C:H6 | 1.86 | 0.40 |
| 40:L5:302:C:H2' | 40:L5:303:C:H6 | 1.87 | 0.40 |
| 40:L5:1177:U:O2' | 40:L5:1178:G:H3' | 2.20 | 0.40 |
| 40:L5:1458:C:C2 | 40:L5:1459:A:C8 | 3.09 | 0.40 |
| 40:L5:1595:G:H1' | 40:L5:1597:G:H21 | 1.86 | 0.40 |
| 40:L5:2004:U:H3 | 40:L5:2016:C:H1' | 1.87 | 0.40 |
| 40:L5:2108:G:H2' | 40:L5:2109:G:H8 | 1.86 | 0.40 |
| 40:L5:2460:A:OP2 | 88:L5:5291:SPD:N10 | 2.54 | 0.40 |
| 40:L5:2634:C:H2' | 40:L5:2635:U:C6 | 2.57 | 0.40 |
| 40:L5:2836:A:C2 | 40:L5:3895:G:H4' | 2.56 | 0.40 |
| 40:L5:3653:A:H4' | 43:LA:179:ILE:HB | 2.03 | 0.40 |
| 40:L5:4091:G:H3' | 40:L5:4114:C:N4 | 2.36 | 0.40 |
| 40:L5:4147:G:H2' | 40:L5:4148:C:H6 | 1.86 | 0.40 |
| 40:L5:4188:U:H2' | 40:L5:4189:U:H6 | 1.86 | 0.40 |
| 40:L5:4593:C:H2' | 40:L5:4594:U:H6 | 1.86 | 0.40 |
| 40:L5:4629:U:C2 | 40:L5:4630:G:C8 | 3.09 | 0.40 |
| 40:L5:5010:PSU:H2' | 40:L5:5011:A:C8 | 2.56 | 0.40 |
| 40:L5:5010:PSU:H2' | 40:L5:5011:A:H8 | 1.87 | 0.40 |
| 41:L7:12:U:OP2 | 41:L7:67:C:O2' | 2.40 | 0.40 |
| 44:LB:196:TRP:O | 44:LB:199:GLU:HG2 | 2.21 | 0.40 |
| 44:LB:217:ILE:HD12 | 44:LB:347:LEU:HB3 | 2.03 | 0.40 |
| 48:LF:136:VAL:HG23 | 48:LF:140:ILE:HD13 | 2.04 | 0.40 |
| 52:LJ:114:ASP:OD1 | 52:LJ:115:LEU:N | 2.54 | 0.40 |
| 55:LN:5:LYS:HG3 | 74:Li:40:VAL:HG11 | 2.03 | 0.40 |
| 59:LS:82:LEU:HA | 59:LS:127:MET:HG2 | 2.02 | 0.40 |
| 75:Lj:28:HIS:HB3 | 75:Lj:31:LYS:HB2 | 2.02 | 0.40 |
| 3:SC:205:VAL:HG12 | 19:S2:1:U:H1' | 2.02 | 0.40 |
| 4:SE:75:LYS:HD2 | 4:SE:77:ARG:HH22 | 1.85 | 0.40 |
| 6:SH:19:PHE:CZ | 6:SH:50:GLU:HB2 | 2.56 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:SH:49:LYS:HB3 | 6:SH:61:ILE:HB | 2.03 | 0.40 |
| 7:SI:172:LEU:HD12 | 7:SI:190:LEU:HD13 | 2.03 | 0.40 |
| 8:SJ:52:LYS:HB3 | 8:SJ:52:LYS:HE2 | 1.71 | 0.40 |
| 10:SN:26:LEU:HD11 | 10:SN:60:VAL:HG12 | 2.03 | 0.40 |
| 16:Sa:38:LYS:HE2 | 16:Sa:38:LYS:HB3 | 1.91 | 0.40 |
| 17:Sb:32:PHE:HB3 | 17:Sb:82:LYS:HE3 | 2.03 | 0.40 |
| 17:Sb:45:THR:OG1 | 17:Sb:82:LYS:NZ | 2.54 | 0.40 |
| 19:S2:888:U:O2' | 19:S2:898:U:N3 | 2.52 | 0.40 |
| 19:S2:1425:G:H2' | 19:S2:1426:U:C6 | 2.57 | 0.40 |
| 19:S2:1467:C:H2' | 19:S2:1468:C:C6 | 2.56 | 0.40 |
| 19:S2:1491:G:HO2' | 31:SU:70:CYS:HG | 1.66 | 0.40 |
| 19:S2:1717:C:H2' | 19:S2:1718:G:O4' | 2.22 | 0.40 |
| 19:S2:1740:C:H2' | 19:S2:1741:U:C6 | 2.56 | 0.40 |
| 20:LR:135:LYS:O | 20:LR:136:ARG:C | 2.64 | 0.40 |
| 20:LR:169:ALA:O | 20:LR:173:ARG:HB2 | 2.21 | 0.40 |
| 20:LR:175:GLU:O | 20:LR:178:GLN:HG3 | 2.20 | 0.40 |
| 22:SR:79:GLU:O | 22:SR:83:ASN:HB2 | 2.22 | 0.40 |
| 24:SF:31:ASN:HD21 | 24:SF:117:ILE:HG21 | 1.86 | 0.40 |
| 24:SF:167:LYS:HG2 | 24:SF:171:GLU:HB2 | 2.02 | 0.40 |
| 31:SU:79:ARG:NH2 | 34:Sd:56:ASP:OXT | 2.48 | 0.40 |
| 39:CI:63:ARG:HA | 39:CI:63:ARG:HD2 | 1.93 | 0.40 |
| 40:L5:432:U:C2 | 87:L5:5292:SPM:H91 | 2.57 | 0.40 |
| 40:L5:937:U:H2' | 40:L5:938:C:C6 | 2.57 | 0.40 |
| 40:L5:1360:G:P | 53:LL:28:GLN:HE22 | 2.44 | 0.40 |
| 40:L5:1691:G:H5' | 58:LQ:15:ARG:HG2 | 2.03 | 0.40 |
| 40:L5:1929:A:C8 | 40:L5:1932:A:H1' | 2.57 | 0.40 |
| 40:L5:2414:G:H2' | 40:L5:2415:U:C6 | 2.57 | 0.40 |
| 40:L5:2508:U:H2' | 40:L5:2509:C:C6 | 2.57 | 0.40 |
| 40:L5:2522:G:H2' | 40:L5:2523:G:C8 | 2.57 | 0.40 |
| 40:L5:2715:G:H2' | 40:L5:2716:C:C6 | 2.57 | 0.40 |
| 40:L5:3650:C:C2 | 40:L5:3651:A:C8 | 3.10 | 0.40 |
| 40:L5:3729:U:H2' | 40:L5:3730:U:H6 | 1.86 | 0.40 |
| 40:L5:3888:G:O6 | 56:LO:96:GLN:NE2 | 2.55 | 0.40 |
| 40:L5:4195:G:O2' | 40:L5:4442:PSU:OP1 | 2.27 | 0.40 |
| 40:L5:4258:C:H2' | 40:L5:4259:C:C6 | 2.56 | 0.40 |
| 40:L5:4477:A:H2' | 40:L5:4478:G:H8 | 1.86 | 0.40 |
| 40:L5:4638:U:H2' | 40:L5:4639:G:N3 | 2.37 | 0.40 |
| 40:L5:4773:C:H2' | 40:L5:4774:C:C6 | 2.57 | 0.40 |
| 41:L7:7:G:H5" | 46:LD:22:ARG:HD3 | 2.03 | 0.40 |
| 42:L8:52:A:H4' | 77:Ll:19:GLN:HA | 2.04 | 0.40 |
| 43:LA:245:ARG:HA | 43:LA:245:ARG:HD2 | 1.90 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:LE:223:ARG:HB3 | 47:LE:224:LYS:HB2 | 2.04 | 0.40 |
| 48:LF:36:LYS:HD3 | 48:LF:36:LYS:HA | 1.76 | 0.40 |
| 76:Lk:5:ILE:HG21 | 76:Lk:11:PHE:HB2 | 2.04 | 0.40 |
| 76:Lk:55:LYS:HE2 | 76:Lk:55:LYS:HB3 | 1.87 | 0.40 |
| 83:Ls:120:GLU:OE2 | 83:Ls:122:THR:OG1 | 2.39 | 0.40 |
| 5:SG:151:ASP:OD1 | 21:LW:105:ARG:NH1 | 2.55 | 0.40 |
| 19:S2:375:U:H2' | 19:S2:376:A:C8 | 2.55 | 0.40 |
| 19:S2:468:A2M:H2' | 19:S2:469:A:O4' | 2.21 | 0.40 |
| 19:S2:980:A:H2' | 19:S2:981:A:H8 | 1.84 | 0.40 |
| 19:S2:1141:G:H2' | 19:S2:1142:G:C8 | 2.57 | 0.40 |
| 19:S2:1424:G:N2 | 30:ST:3:GLY:HA3 | 2.36 | 0.40 |
| 19:S2:1443:C:H1' | 28:SQ:22:VAL:HG21 | 2.04 | 0.40 |
| 19:S2:1558:C:H2' | 19:S2:1559:C:C6 | 2.56 | 0.40 |
| 24:SF:88:MET:HA | 24:SF:91:ARG:HG2 | 2.04 | 0.40 |
| 28:SQ:25:CYS:HB2 | 28:SQ:91:ALA:HB1 | 2.02 | 0.40 |
| 31:SU:99:LYS:HD3 | 31:SU:99:LYS:HA | 1.84 | 0.40 |
| 38:Pt:71:A:H2' | 38:Pt:72:C:C6 | 2.57 | 0.40 |
| 40:L5:214:G:H2' | 40:L5:215:C:C6 | 2.56 | 0.40 |
| 40:L5:654:C:H3' | 40:L5:655:C:H6 | 1.85 | 0.40 |
| 40:L5:1614:C:H2' | 40:L5:1615:C:H6 | 1.87 | 0.40 |
| 40:L5:1951:G:H4' | 59:LS:95:ARG:HH22 | 1.85 | 0.40 |
| 40:L5:2333:G:OP1 | 42:L8:20:A:O2' | 2.40 | 0.40 |
| 40:L5:2540:C:H2' | 40:L5:2541:G:C8 | 2.54 | 0.40 |
| 40:L5:2727:C:H2' | 40:L5:2728:U:C6 | 2.56 | 0.40 |
| 40:L5:3723:A:H2' | 40:L5:3724:A:C8 | 2.57 | 0.40 |
| 40:L5:4195:G:N2 | 51:LI:116:ARG:HA | 2.37 | 0.40 |
| 40:L5:4667:C:H2' | 40:L5:4668:U:O4' | 2.22 | 0.40 |
| 42:L8:141:C:H2' | 42:L8:142:U:H6 | 1.85 | 0.40 |
| 45:LC:180:ILE:HD11 | 45:LC:227:ILE:HD11 | 2.04 | 0.40 |
| 45:LC:349:LEU:HD23 | 45:LC:349:LEU:HA | 1.96 | 0.40 |
| 46:LD:89:LYS:HE2 | 46:LD:229:ASN:HB2 | 2.04 | 0.40 |
| 47:LE:224:LYS:HB2 | 47:LE:224:LYS:HE2 | 1.95 | 0.40 |
| 54:LM:24:LEU:HD11 | 54:LM:86:TRP:CD2 | 2.57 | 0.40 |
| 62:LV:75:LYS:HE3 | 62:LV:77:HIS:CE1 | 2.57 | 0.40 |

There are no symmetry-related clashes.

## 5.3 Torsion angles (i)

### 5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 1 | SA | 219/221 (99%) | 207 (94%) | 12 (6%) | 0 | 100 | 100 |
| 2 | SB | 212/214 (99%) | 203 (96%) | 9 (4%) | 0 | 100 | 100 |
| 3 | SC | 218/222 (98%) | 205 (94%) | 13 (6%) | 0 | 100 | 100 |
| 4 | SE | 260/262 (99%) | 246 (95%) | 14 (5%) | 0 | 100 | 100 |
| 5 | SG | 235/237 (99%) | 221 (94%) | 14 (6%) | 0 | 100 | 100 |
| 6 | SH | 182/189 (96%) | 166 (91%) | 16 (9%) | 0 | 100 | 100 |
| 7 | SI | 204/206 (99%) | 191 (94%) | 13 (6%) | 0 | 100 | 100 |
| 8 | SJ | 183/185 (99%) | 173 (94%) | 10 (6%) | 0 | 100 | 100 |
| 9 | SL | 151/153 (99%) | 144 (95%) | 7 (5%) | 0 | 100 | 100 |
| 10 | SN | 148/150 (99%) | 145 (98%) | 3 (2%) | 0 | 100 | 100 |
| 11 | SO | 135/140 (96%) | 127 (94%) | 8 (6%) | 0 | 100 | 100 |
| 12 | SV | 81/83 (98%) | 75 (93%) | 6 (7%) | 0 | 100 | 100 |
| 13 | SW | 127/129 (98%) | 120 (94%) | 7 (6%) | 0 | 100 | 100 |
| 14 | SX | 139/141 (99%) | 133 (96%) | 6 (4%) | 0 | 100 | 100 |
| 15 | SY | 129/131 (98%) | 125 (97%) | 4 (3%) | 0 | 100 | 100 |
| 16 | Sa | 100/102 (98%) | 96 (96%) | 4 (4%) | 0 | 100 | 100 |
| 17 | Sb | 81/83 (98%) | 74 (91%) | 7 (9%) | 0 | 100 | 100 |
| 18 | Se | 56/58 (97%) | 52 (93%) | 4 (7%) | 0 | 100 | 100 |
| 20 | LR | 185/187 (99%) | 177 (96%) | 8 (4%) | 0 | 100 | 100 |
| 21 | LW | 112/124 (90%) | 110 (98%) | 2 (2%) | 0 | 100 | 100 |
| 22 | SR | 133/135 (98%) | 124 (93%) | 8 (6%) | 1 (1%) | 16 | 51 |
| 23 | SD | 225/227 (99%) | 219 (97%) | 6 (3%) | 0 | 100 | 100 |
| 24 | SF | 187/189 (99%) | 175 (94%) | 12 (6%) | 0 | 100 | 100 |
| 25 | SK | 96/98 (98%) | 83 (86%) | 13 (14%) | 0 | 100 | 100 |
| 26 | SM | 120/122 (98%) | 109 (91%) | 11 (9%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 27 | SP | 119/121 (98%) | 116 (98%) | 3 (2%) | 0 | 100 | 100 |
| 28 | SQ | 142/144 (99%) | 133 (94%) | 9 (6%) | 0 | 100 | 100 |
| 29 | SS | 143/145 (99%) | 136 (95%) | 7 (5%) | 0 | 100 | 100 |
| 30 | ST | 141/143 (99%) | 140 (99%) | 1 (1%) | 0 | 100 | 100 |
| 31 | SU | 102/104 (98%) | 99 (97%) | 3 (3%) | 0 | 100 | 100 |
| 32 | SZ | 73/75 (97%) | 66 (90%) | 7 (10%) | 0 | 100 | 100 |
| 33 | Sc | 62/64 (97%) | 58 (94%) | 4 (6%) | 0 | 100 | 100 |
| 34 | Sd | 53/55 (96%) | 52 (98%) | 1 (2%) | 0 | 100 | 100 |
| 35 | Sf | 65/67 (97%) | 53 (82%) | 12 (18%) | 0 | 100 | 100 |
| 36 | Sg | 311/313 (99%) | 291 (94%) | 20 (6%) | 0 | 100 | 100 |
| 39 | CI | 29/31 (94%) | 29 (100%) | 0 | 0 | 100 | 100 |
| 43 | LA | 246/248 (99%) | 235 (96%) | 11 (4%) | 0 | 100 | 100 |
| 44 | LB | 400/402 (100%) | 384 (96%) | 16 (4%) | 0 | 100 | 100 |
| 45 | LC | 366/368 (100%) | 345 (94%) | 21 (6%) | 0 | 100 | 100 |
| 46 | LD | 291/293 (99%) | 282 (97%) | 9 (3%) | 0 | 100 | 100 |
| 47 | LE | 236/250 (94%) | 216 (92%) | 20 (8%) | 0 | 100 | 100 |
| 48 | LF | 223/225 (99%) | 213 (96%) | 10 (4%) | 0 | 100 | 100 |
| 49 | LG | 239/241 (99%) | 228 (95%) | 11 (5%) | 0 | 100 | 100 |
| 50 | LH | 188/190 (99%) | 180 (96%) | 8 (4%) | 0 | 100 | 100 |
| 51 | LI | 211/213 (99%) | 207 (98%) | 4 (2%) | 0 | 100 | 100 |
| 52 | LJ | 168/176 (96%) | 161 (96%) | 7 (4%) | 0 | 100 | 100 |
| 53 | LL | 208/210 (99%) | 200 (96%) | 8 (4%) | 0 | 100 | 100 |
| 54 | LM | 137/139 (99%) | 130 (95%) | 7 (5%) | 0 | 100 | 100 |
| 55 | LN | 201/203 (99%) | 198 (98%) | 3 (2%) | 0 | 100 | 100 |
| 56 | LO | 199/201 (99%) | 196 (98%) | 3 (2%) | 0 | 100 | 100 |
| 57 | LP | 151/153 (99%) | 145 (96%) | 6 (4%) | 0 | 100 | 100 |
| 58 | LQ | 185/187 (99%) | 179 (97%) | 6 (3%) | 0 | 100 | 100 |
| 59 | LS | 173/175 (99%) | 168 (97%) | 5 (3%) | 0 | 100 | 100 |
| 60 | LT | 157/159 (99%) | 152 (97%) | 5 (3%) | 0 | 100 | 100 |
| 61 | LU | 99/101 (98%) | 93 (94%) | 6 (6%) | 0 | 100 | 100 |
| 62 | LV | 129/131 (98%) | 125 (97%) | 4 (3%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 63 | LX | 118/120 (98%) | 114 (97%) | 4 (3%) | 0 | 100 | 100 |
| 64 | LY | 132/134 (98%) | 126 (96%) | 6 (4%) | 0 | 100 | 100 |
| 65 | LZ | 133/135 (98%) | 125 (94%) | 8 (6%) | 0 | 100 | 100 |
| 66 | La | 145/147 (99%) | 138 (95%) | 7 (5%) | 0 | 100 | 100 |
| 67 | Lb | 105/121 (87%) | 98 (93%) | 7 (7%) | 0 | 100 | 100 |
| 68 | Lc | 96/98 (98%) | 91 (95%) | 5 (5%) | 0 | 100 | 100 |
| 69 | Ld | 105/107 (98%) | 101 (96%) | 4 (4%) | 0 | 100 | 100 |
| 70 | Le | 126/128 (98%) | 125 (99%) | 1 (1%) | 0 | 100 | 100 |
| 71 | Lf | 107/109 (98%) | 105 (98%) | 2 (2%) | 0 | 100 | 100 |
| 72 | Lg | 112/114 (98%) | 110 (98%) | 2 (2%) | 0 | 100 | 100 |
| 73 | Lh | 120/122 (98%) | 117 (98%) | 3 (2%) | 0 | 100 | 100 |
| 74 | Li | 100/102 (98%) | 98 (98%) | 2 (2%) | 0 | 100 | 100 |
| 75 | Lj | 84/86 (98%) | 82 (98%) | 2 (2%) | 0 | 100 | 100 |
| 76 | Lk | 67/69 (97%) | 65 (97%) | 2 (3%) | 0 | 100 | 100 |
| 77 | Ll | 48/50 (96%) | 45 (94%) | 3 (6%) | 0 | 100 | 100 |
| 78 | Lm | 50/52 (96%) | 50 (100%) | 0 | 0 | 100 | 100 |
| 79 | Ln | 22/24 (92%) | 22 (100%) | 0 | 0 | 100 | 100 |
| 80 | Lo | 103/105 (98%) | 97 (94%) | 6 (6%) | 0 | 100 | 100 |
| 81 | Lp | 89/91 (98%) | 86 (97%) | 3 (3%) | 0 | 100 | 100 |
| 82 | Lr | 123/125 (98%) | 118 (96%) | 5 (4%) | 0 | 100 | 100 |
| 83 | Ls | 194/196 (99%) | 183 (94%) | 11 (6%) | 0 | 100 | 100 |
| 84 | Lt | 128/157 (82%) | 104 (81%) | 24 (19%) | 0 | 100 | 100 |
| All | All | 11672/11907 (98%) | 11110 (95%) | 561 (5%) | 1 (0%) | 100 | 100 |

All (1) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 22 | SR | 129 | LYS |

### 5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 1 | SA | 183/183 (100%) | 183 (100%) | 0 | 100 | 100 |
| 2 | SB | 195/195 (100%) | 195 (100%) | 0 | 100 | 100 |
| 3 | SC | 186/188 (99%) | 186 (100%) | 0 | 100 | 100 |
| 4 | SE | 224/224 (100%) | 224 (100%) | 0 | 100 | 100 |
| 5 | SG | 207/207 (100%) | 207 (100%) | 0 | 100 | 100 |
| 6 | SH | 166/169 (98%) | 166 (100%) | 0 | 100 | 100 |
| 7 | SI | 178/178 (100%) | 178 (100%) | 0 | 100 | 100 |
| 8 | SJ | 161/161 (100%) | 161 (100%) | 0 | 100 | 100 |
| 9 | SL | 137/137 (100%) | 137 (100%) | 0 | 100 | 100 |
| 10 | SN | 130/130 (100%) | 130 (100%) | 0 | 100 | 100 |
| 11 | SO | 107/110 (97%) | 107 (100%) | 0 | 100 | 100 |
| 12 | SV | 67/67 (100%) | 67 (100%) | 0 | 100 | 100 |
| 13 | SW | 112/112 (100%) | 112 (100%) | 0 | 100 | 100 |
| 14 | SX | 113/113 (100%) | 113 (100%) | 0 | 100 | 100 |
| 15 | SY | 113/113 (100%) | 113 (100%) | 0 | 100 | 100 |
| 16 | Sa | 89/89 (100%) | 89 (100%) | 0 | 100 | 100 |
| 17 | Sb | 75/75 (100%) | 75 (100%) | 0 | 100 | 100 |
| 18 | Se | 47/47 (100%) | 47 (100%) | 0 | 100 | 100 |
| 20 | LR | 166/166 (100%) | 164 (99%) | 2 (1%) | 67 | 83 |
| 21 | LW | 95/103 (92%) | 95 (100%) | 0 | 100 | 100 |
| 22 | SR | 122/122 (100%) | 120 (98%) | 2 (2%) | 58 | 77 |
| 23 | SD | 190/190 (100%) | 190 (100%) | 0 | 100 | 100 |
| 24 | SF | 159/159 (100%) | 159 (100%) | 0 | 100 | 100 |
| 25 | SK | 89/89 (100%) | 89 (100%) | 0 | 100 | 100 |
| 26 | SM | 102/104 (98%) | 102 (100%) | 0 | 100 | 100 |
| 27 | SP | 107/107 (100%) | 107 (100%) | 0 | 100 | 100 |
| 28 | SQ | 119/119 (100%) | 119 (100%) | 0 | 100 | 100 |
| 29 | SS | 126/126 (100%) | 126 (100%) | 0 | 100 | 100 |
| 30 | ST | 113/113 (100%) | 113 (100%) | 0 | 100 | 100 |
| 31 | SU | 94/94 (100%) | 94 (100%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 32 | SZ | 66/66 (100%) | 66 (100%) | 0 | 100 | 100 |
| 33 | Sc | 57/57 (100%) | 57 (100%) | 0 | 100 | 100 |
| 34 | Sd | 48/48 (100%) | 48 (100%) | 0 | 100 | 100 |
| 35 | Sf | 60/60 (100%) | 60 (100%) | 0 | 100 | 100 |
| 36 | Sg | 272/272 (100%) | 272 (100%) | 0 | 100 | 100 |
| 39 | CI | 25/25 (100%) | 25 (100%) | 0 | 100 | 100 |
| 43 | LA | 190/190 (100%) | 190 (100%) | 0 | 100 | 100 |
| 44 | LB | 348/348 (100%) | 348 (100%) | 0 | 100 | 100 |
| 45 | LC | 306/306 (100%) | 306 (100%) | 0 | 100 | 100 |
| 46 | LD | 246/247 (100%) | 246 (100%) | 0 | 100 | 100 |
| 47 | LE | 212/222 (96%) | 212 (100%) | 0 | 100 | 100 |
| 48 | LF | 194/194 (100%) | 194 (100%) | 0 | 100 | 100 |
| 49 | LG | 203/205 (99%) | 203 (100%) | 0 | 100 | 100 |
| 50 | LH | 169/169 (100%) | 169 (100%) | 0 | 100 | 100 |
| 51 | LI | 180/180 (100%) | 180 (100%) | 0 | 100 | 100 |
| 52 | LJ | 143/148 (97%) | 143 (100%) | 0 | 100 | 100 |
| 53 | LL | 176/176 (100%) | 176 (100%) | 0 | 100 | 100 |
| 54 | LM | 118/118 (100%) | 118 (100%) | 0 | 100 | 100 |
| 55 | LN | 171/171 (100%) | 171 (100%) | 0 | 100 | 100 |
| 56 | LO | 173/173 (100%) | 173 (100%) | 0 | 100 | 100 |
| 57 | LP | 134/134 (100%) | 134 (100%) | 0 | 100 | 100 |
| 58 | LQ | 164/164 (100%) | 164 (100%) | 0 | 100 | 100 |
| 59 | LS | 156/156 (100%) | 156 (100%) | 0 | 100 | 100 |
| 60 | LT | 139/139 (100%) | 139 (100%) | 0 | 100 | 100 |
| 61 | LU | 91/91 (100%) | 91 (100%) | 0 | 100 | 100 |
| 62 | LV | 101/101 (100%) | 101 (100%) | 0 | 100 | 100 |
| 63 | LX | 108/108 (100%) | 108 (100%) | 0 | 100 | 100 |
| 64 | LY | 124/124 (100%) | 124 (100%) | 0 | 100 | 100 |
| 65 | LZ | 117/117 (100%) | 117 (100%) | 0 | 100 | 100 |
| 66 | La | 120/120 (100%) | 120 (100%) | 0 | 100 | 100 |
| 67 | Lb | 88/101 (87%) | 88 (100%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 68 | Lc | 83/83 (100%) | 83 (100%) | 0 | 100 | 100 |
| 69 | Ld | 98/98 (100%) | 98 (100%) | 0 | 100 | 100 |
| 70 | Le | 114/114 (100%) | 114 (100%) | 0 | 100 | 100 |
| 71 | Lf | 88/88 (100%) | 88 (100%) | 0 | 100 | 100 |
| 72 | Lg | 98/98 (100%) | 98 (100%) | 0 | 100 | 100 |
| 73 | Lh | 109/109 (100%) | 109 (100%) | 0 | 100 | 100 |
| 74 | Li | 86/86 (100%) | 86 (100%) | 0 | 100 | 100 |
| 75 | Lj | 73/73 (100%) | 73 (100%) | 0 | 100 | 100 |
| 76 | Lk | 64/64 (100%) | 64 (100%) | 0 | 100 | 100 |
| 77 | Ll | 47/47 (100%) | 47 (100%) | 0 | 100 | 100 |
| 78 | Lm | 48/48 (100%) | 48 (100%) | 0 | 100 | 100 |
| 79 | Ln | 23/23 (100%) | 23 (100%) | 0 | 100 | 100 |
| 80 | Lo | 93/93 (100%) | 93 (100%) | 0 | 100 | 100 |
| 81 | Lp | 74/74 (100%) | 74 (100%) | 0 | 100 | 100 |
| 82 | Lr | 109/109 (100%) | 109 (100%) | 0 | 100 | 100 |
| 83 | Ls | 162/164 (99%) | 162 (100%) | 0 | 100 | 100 |
| 84 | Lt | 107/130 (82%) | 107 (100%) | 0 | 100 | 100 |
| All | All | 10147/10221 (99%) | 10143 (100%) | 4 (0%) | 100 | 100 |

All (4) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 20 | LR | 135 | LYS |
| 20 | LR | 137 | ILE |
| 22 | SR | 79 | GLU |
| 22 | SR | 82 | ASP |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (91) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | SA | 50 | ASN |
| 2 | SB | 75 | GLN |
| 2 | SB | 101 | HIS |
| 3 | SC | 115 | GLN |
| 4 | SE | 161 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 6 | SH | 126 | HIS |
| 6 | SH | 162 | GLN |
| 7 | SI | 9 | HIS |
| 7 | SI | 52 | ASN |
| 8 | SJ | 177 | ASN |
| 13 | SW | 15 | ASN |
| 13 | SW | 98 | GLN |
| 14 | SX | 16 | HIS |
| 15 | SY | 124 | ASN |
| 16 | Sa | 17 | HIS |
| 18 | Se | 15 | GLN |
| 20 | LR | 39 | GLN |
| 20 | LR | 143 | HIS |
| 21 | LW | 48 | GLN |
| 24 | SF | 79 | HIS |
| 25 | SK | 7 | ASN |
| 26 | SM | 48 | HIS |
| 28 | SQ | 48 | GLN |
| 28 | SQ | 142 | GLN |
| 29 | SS | 72 | GLN |
| 29 | SS | 85 | ASN |
| 29 | SS | 97 | GLN |
| 30 | ST | 105 | GLN |
| 31 | SU | 85 | HIS |
| 32 | SZ | 46 | ASN |
| 32 | SZ | 112 | ASN |
| 34 | Sd | 37 | ASN |
| 36 | Sg | 285 | GLN |
| 43 | LA | 194 | ASN |
| 44 | LB | 184 | GLN |
| 45 | LC | 38 | ASN |
| 45 | LC | 119 | GLN |
| 45 | LC | 317 | ASN |
| 45 | LC | 347 | HIS |
| 45 | LC | 362 | GLN |
| 46 | LD | 267 | ASN |
| 46 | LD | 275 | GLN |
| 48 | LF | 205 | ASN |
| 48 | LF | 239 | GLN |
| 49 | LG | 82 | GLN |
| 49 | LG | 90 | GLN |
| 49 | LG | 94 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 49 | LG | 112 | GLN |
| 50 | LH | 98 | HIS |
| 50 | LH | 102 | ASN |
| 50 | LH | 140 | GLN |
| 50 | LH | 188 | GLN |
| 50 | LH | 189 | GLN |
| 52 | LJ | 46 | GLN |
| 52 | LJ | 167 | GLN |
| 54 | LM | 34 | ASN |
| 54 | LM | 48 | GLN |
| 54 | LM | 66 | HIS |
| 55 | LN | 32 | GLN |
| 56 | LO | 14 | HIS |
| 56 | LO | 143 | HIS |
| 56 | LO | 199 | HIS |
| 57 | LP | 64 | ASN |
| 57 | LP | 75 | GLN |
| 57 | LP | 80 | GLN |
| 57 | LP | 120 | ASN |
| 58 | LQ | 21 | GLN |
| 60 | LT | 69 | GLN |
| 60 | LT | 127 | GLN |
| 60 | LT | 144 | ASN |
| 63 | LX | 57 | GLN |
| 63 | LX | 111 | GLN |
| 64 | LY | 14 | ASN |
| 65 | LZ | 76 | ASN |
| 65 | LZ | 78 | ASN |
| 66 | La | 19 | HIS |
| 66 | La | 34 | ASN |
| 66 | La | 40 | HIS |
| 68 | Lc | 51 | ASN |
| 70 | Le | 107 | ASN |
| 70 | Le | 124 | ASN |
| 71 | Lf | 21 | GLN |
| 72 | Lg | 114 | GLN |
| 73 | Lh | 20 | GLN |
| 75 | Lj | 13 | ASN |
| 75 | Lj | 28 | HIS |
| 75 | Lj | 66 | HIS |
| 82 | Lr | 30 | ASN |
| 83 | Ls | 58 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 84 | Lt | 118 | HIS |
| 84 | Lt | 137 | GLN |

### 5.3.3 RNA (i)

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|---|---|---|---|---|
| 19 | S2 | 1715/1740 (98%) | 408 (23%) | 4 (0%) |
| 37 | At | 69/71 (97%) | 16 (23%) | 0 |
| 38 | Pt | 72/74 (97%) | 15 (20%) | 0 |
| 40 | L5 | 3643/3655 (99%) | 816 (22%) | 18 (0%) |
| 41 | L7 | 119/120 (99%) | 16 (13%) | 0 |
| 42 | L8 | 155/156 (99%) | 27 (17%) | 0 |
| All | All | 5773/5816 (99%) | 1298 (22%) | 22 (0%) |

All (1298) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 2 | A |
| 19 | S2 | 3 | C |
| 19 | S2 | 14 | C |
| 19 | S2 | 25 | A |
| 19 | S2 | 33 | G |
| 19 | S2 | 37 | C |
| 19 | S2 | 41 | G |
| 19 | S2 | 42 | A |
| 19 | S2 | 44 | U |
| 19 | S2 | 45 | A |
| 19 | S2 | 46 | A |
| 19 | S2 | 49 | C |
| 19 | S2 | 56 | G |
| 19 | S2 | 62 | G |
| 19 | S2 | 67 | C |
| 19 | S2 | 68 | A |
| 19 | S2 | 72 | C |
| 19 | S2 | 73 | C |
| 19 | S2 | 74 | G |
| 19 | S2 | 76 | U |
| 19 | S2 | 92 | A |
| 19 | S2 | 99 | A2M |
| 19 | S2 | 103 | A |
| 19 | S2 | 113 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 114 | G |
| 19 | S2 | 115 | U |
| 19 | S2 | 126 | G |
| 19 | S2 | 130 | G |
| 19 | S2 | 142 | C |
| 19 | S2 | 143 | U |
| 19 | S2 | 149 | A |
| 19 | S2 | 158 | A |
| 19 | S2 | 160 | U |
| 19 | S2 | 162 | C |
| 19 | S2 | 168 | C |
| 19 | S2 | 170 | A |
| 19 | S2 | 175 | A |
| 19 | S2 | 179 | C |
| 19 | S2 | 188 | C |
| 19 | S2 | 190 | G |
| 19 | S2 | 196 | C |
| 19 | S2 | 198 | U |
| 19 | S2 | 200 | G |
| 19 | S2 | 203 | G |
| 19 | S2 | 207 | G |
| 19 | S2 | 208 | G |
| 19 | S2 | 214 | U |
| 19 | S2 | 220 | U |
| 19 | S2 | 288 | G |
| 19 | S2 | 291 | G |
| 19 | S2 | 292 | A |
| 19 | S2 | 295 | C |
| 19 | S2 | 302 | A |
| 19 | S2 | 303 | C |
| 19 | S2 | 306 | C |
| 19 | S2 | 307 | G |
| 19 | S2 | 308 | G |
| 19 | S2 | 309 | G |
| 19 | S2 | 311 | C |
| 19 | S2 | 312 | G |
| 19 | S2 | 318 | A |
| 19 | S2 | 319 | C |
| 19 | S2 | 323 | C |
| 19 | S2 | 324 | C |
| 19 | S2 | 325 | C |
| 19 | S2 | 326 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 328 | U |
| 19 | S2 | 329 | G |
| 19 | S2 | 332 | G |
| 19 | S2 | 335 | G |
| 19 | S2 | 339 | A |
| 19 | S2 | 340 | C |
| 19 | S2 | 349 | A |
| 19 | S2 | 351 | G |
| 19 | S2 | 360 | A |
| 19 | S2 | 361 | U |
| 19 | S2 | 362 | C |
| 19 | S2 | 364 | A |
| 19 | S2 | 368 | U |
| 19 | S2 | 369 | C |
| 19 | S2 | 370 | G |
| 19 | S2 | 381 | C |
| 19 | S2 | 383 | G |
| 19 | S2 | 385 | G |
| 19 | S2 | 398 | A |
| 19 | S2 | 407 | G |
| 19 | S2 | 408 | A |
| 19 | S2 | 409 | C |
| 19 | S2 | 426 | A |
| 19 | S2 | 448 | A |
| 19 | S2 | 449 | A |
| 19 | S2 | 450 | C |
| 19 | S2 | 452 | G |
| 19 | S2 | 464 | A |
| 19 | S2 | 465 | A |
| 19 | S2 | 471 | G |
| 19 | S2 | 472 | C |
| 19 | S2 | 473 | A |
| 19 | S2 | 474 | G |
| 19 | S2 | 476 | A |
| 19 | S2 | 482 | G |
| 19 | S2 | 487 | U |
| 19 | S2 | 488 | U |
| 19 | S2 | 492 | C |
| 19 | S2 | 493 | A |
| 19 | S2 | 502 | C |
| 19 | S2 | 517 | OMC |
| 19 | S2 | 531 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 532 | C |
| 19 | S2 | 536 | A |
| 19 | S2 | 537 | C |
| 19 | S2 | 540 | U |
| 19 | S2 | 542 | U |
| 19 | S2 | 544 | G |
| 19 | S2 | 546 | G |
| 19 | S2 | 547 | G |
| 19 | S2 | 551 | U |
| 19 | S2 | 557 | U |
| 19 | S2 | 558 | G |
| 19 | S2 | 563 | G |
| 19 | S2 | 564 | A |
| 19 | S2 | 576 | A2M |
| 19 | S2 | 583 | A |
| 19 | S2 | 587 | A |
| 19 | S2 | 589 | G |
| 19 | S2 | 590 | A |
| 19 | S2 | 591 | U |
| 19 | S2 | 592 | C |
| 19 | S2 | 604 | A |
| 19 | S2 | 606 | G |
| 19 | S2 | 607 | U |
| 19 | S2 | 614 | C |
| 19 | S2 | 617 | G |
| 19 | S2 | 623 | G |
| 19 | S2 | 628 | A |
| 19 | S2 | 631 | U |
| 19 | S2 | 638 | C |
| 19 | S2 | 643 | A |
| 19 | S2 | 644 | OMG |
| 19 | S2 | 655 | A |
| 19 | S2 | 660 | C |
| 19 | S2 | 663 | C |
| 19 | S2 | 664 | A |
| 19 | S2 | 668 | A2M |
| 19 | S2 | 669 | A |
| 19 | S2 | 671 | A |
| 19 | S2 | 672 | A |
| 19 | S2 | 673 | G |
| 19 | S2 | 683 | OMG |
| 19 | S2 | 688 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 689 | U |
| 19 | S2 | 692 | G |
| 19 | S2 | 695 | C |
| 19 | S2 | 696 | G |
| 19 | S2 | 697 | G |
| 19 | S2 | 732 | U |
| 19 | S2 | 733 | C |
| 19 | S2 | 738 | C |
| 19 | S2 | 749 | U |
| 19 | S2 | 750 | C |
| 19 | S2 | 751 | G |
| 19 | S2 | 752 | G |
| 19 | S2 | 753 | C |
| 19 | S2 | 788 | G |
| 19 | S2 | 789 | G |
| 19 | S2 | 791 | C |
| 19 | S2 | 792 | C |
| 19 | S2 | 797 | C |
| 19 | S2 | 798 | G |
| 19 | S2 | 799 | OMU |
| 19 | S2 | 801 | PSU |
| 19 | S2 | 809 | A |
| 19 | S2 | 821 | G |
| 19 | S2 | 822 | U |
| 19 | S2 | 823 | U |
| 19 | S2 | 824 | C |
| 19 | S2 | 827 | A |
| 19 | S2 | 830 | A |
| 19 | S2 | 834 | C |
| 19 | S2 | 835 | C |
| 19 | S2 | 836 | G |
| 19 | S2 | 837 | A |
| 19 | S2 | 838 | G |
| 19 | S2 | 839 | C |
| 19 | S2 | 840 | C |
| 19 | S2 | 842 | C |
| 19 | S2 | 844 | U |
| 19 | S2 | 847 | A |
| 19 | S2 | 863 | PSU |
| 19 | S2 | 867 | OMG |
| 19 | S2 | 870 | A |
| 19 | S2 | 874 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 877 | C |
| 19 | S2 | 878 | G |
| 19 | S2 | 880 | G |
| 19 | S2 | 888 | U |
| 19 | S2 | 889 | U |
| 19 | S2 | 891 | G |
| 19 | S2 | 894 | G |
| 19 | S2 | 896 | U |
| 19 | S2 | 897 | U |
| 19 | S2 | 898 | U |
| 19 | S2 | 899 | U |
| 19 | S2 | 900 | C |
| 19 | S2 | 901 | G |
| 19 | S2 | 903 | A |
| 19 | S2 | 912 | C |
| 19 | S2 | 913 | A |
| 19 | S2 | 917 | U |
| 19 | S2 | 919 | A |
| 19 | S2 | 920 | A |
| 19 | S2 | 933 | G |
| 19 | S2 | 950 | C |
| 19 | S2 | 954 | U |
| 19 | S2 | 963 | A |
| 19 | S2 | 970 | G |
| 19 | S2 | 971 | G |
| 19 | S2 | 972 | A |
| 19 | S2 | 982 | G |
| 19 | S2 | 990 | A |
| 19 | S2 | 992 | A |
| 19 | S2 | 999 | G |
| 19 | S2 | 1001 | A |
| 19 | S2 | 1002 | U |
| 19 | S2 | 1008 | A |
| 19 | S2 | 1017 | U |
| 19 | S2 | 1023 | A |
| 19 | S2 | 1027 | A |
| 19 | S2 | 1045 | PSU |
| 19 | S2 | 1060 | A |
| 19 | S2 | 1061 | U |
| 19 | S2 | 1062 | A |
| 19 | S2 | 1067 | C |
| 19 | S2 | 1078 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 1083 | A |
| 19 | S2 | 1085 | C |
| 19 | S2 | 1108 | G |
| 19 | S2 | 1109 | C |
| 19 | S2 | 1113 | A |
| 19 | S2 | 1116 | C |
| 19 | S2 | 1118 | C |
| 19 | S2 | 1119 | A |
| 19 | S2 | 1121 | G |
| 19 | S2 | 1123 | C |
| 19 | S2 | 1133 | A |
| 19 | S2 | 1138 | C |
| 19 | S2 | 1149 | A |
| 19 | S2 | 1150 | A |
| 19 | S2 | 1153 | C |
| 19 | S2 | 1154 | U |
| 19 | S2 | 1161 | U |
| 19 | S2 | 1195 | A |
| 19 | S2 | 1200 | A |
| 19 | S2 | 1207 | G |
| 19 | S2 | 1208 | A |
| 19 | S2 | 1215 | C |
| 19 | S2 | 1216 | C |
| 19 | S2 | 1217 | A |
| 19 | S2 | 1220 | A |
| 19 | S2 | 1224 | G |
| 19 | S2 | 1227 | G |
| 19 | S2 | 1240 | A |
| 19 | S2 | 1242 | U |
| 19 | S2 | 1243 | U |
| 19 | S2 | 1248 | B8N |
| 19 | S2 | 1251 | A |
| 19 | S2 | 1253 | A |
| 19 | S2 | 1256 | G |
| 19 | S2 | 1257 | G |
| 19 | S2 | 1264 | C |
| 19 | S2 | 1271 | C |
| 19 | S2 | 1272 | OMC |
| 19 | S2 | 1274 | G |
| 19 | S2 | 1275 | G |
| 19 | S2 | 1281 | G |
| 19 | S2 | 1282 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 1283 | C |
| 19 | S2 | 1285 | G |
| 19 | S2 | 1286 | G |
| 19 | S2 | 1288 | OMU |
| 19 | S2 | 1290 | G |
| 19 | S2 | 1294 | G |
| 19 | S2 | 1295 | A |
| 19 | S2 | 1298 | G |
| 19 | S2 | 1301 | A |
| 19 | S2 | 1302 | G |
| 19 | S2 | 1303 | C |
| 19 | S2 | 1304 | U |
| 19 | S2 | 1308 | U |
| 19 | S2 | 1320 | G |
| 19 | S2 | 1333 | U |
| 19 | S2 | 1342 | U |
| 19 | S2 | 1354 | G |
| 19 | S2 | 1357 | A |
| 19 | S2 | 1358 | U |
| 19 | S2 | 1371 | U |
| 19 | S2 | 1372 | U |
| 19 | S2 | 1375 | G |
| 19 | S2 | 1376 | A |
| 19 | S2 | 1378 | A |
| 19 | S2 | 1382 | A |
| 19 | S2 | 1401 | A |
| 19 | S2 | 1402 | A |
| 19 | S2 | 1406 | G |
| 19 | S2 | 1408 | U |
| 19 | S2 | 1413 | G |
| 19 | S2 | 1414 | A |
| 19 | S2 | 1418 | C |
| 19 | S2 | 1419 | C |
| 19 | S2 | 1420 | G |
| 19 | S2 | 1421 | A |
| 19 | S2 | 1422 | G |
| 19 | S2 | 1423 | C |
| 19 | S2 | 1428 | G |
| 19 | S2 | 1432 | U |
| 19 | S2 | 1433 | C |
| 19 | S2 | 1435 | C |
| 19 | S2 | 1436 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 1437 | C |
| 19 | S2 | 1438 | A |
| 19 | S2 | 1442 | OMU |
| 19 | S2 | 1449 | G |
| 19 | S2 | 1454 | A |
| 19 | S2 | 1455 | A |
| 19 | S2 | 1462 | U |
| 19 | S2 | 1463 | U |
| 19 | S2 | 1464 | C |
| 19 | S2 | 1480 | A |
| 19 | S2 | 1489 | A |
| 19 | S2 | 1490 | OMG |
| 19 | S2 | 1492 | U |
| 19 | S2 | 1494 | U |
| 19 | S2 | 1497 | G |
| 19 | S2 | 1498 | A |
| 19 | S2 | 1507 | G |
| 19 | S2 | 1509 | U |
| 19 | S2 | 1520 | G |
| 19 | S2 | 1521 | C |
| 19 | S2 | 1531 | A |
| 19 | S2 | 1533 | A |
| 19 | S2 | 1534 | C |
| 19 | S2 | 1544 | C |
| 19 | S2 | 1547 | C |
| 19 | S2 | 1552 | G |
| 19 | S2 | 1555 | U |
| 19 | S2 | 1556 | A |
| 19 | S2 | 1558 | C |
| 19 | S2 | 1560 | U |
| 19 | S2 | 1573 | G |
| 19 | S2 | 1574 | C |
| 19 | S2 | 1580 | A |
| 19 | S2 | 1581 | C |
| 19 | S2 | 1585 | U |
| 19 | S2 | 1587 | G |
| 19 | S2 | 1588 | A |
| 19 | S2 | 1598 | G |
| 19 | S2 | 1600 | G |
| 19 | S2 | 1604 | G |
| 19 | S2 | 1606 | G |
| 19 | S2 | 1621 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 1623 | A |
| 19 | S2 | 1633 | A |
| 19 | S2 | 1634 | A |
| 19 | S2 | 1637 | A |
| 19 | S2 | 1639 | G7M |
| 19 | S2 | 1648 | G |
| 19 | S2 | 1654 | G |
| 19 | S2 | 1656 | G |
| 19 | S2 | 1663 | A |
| 19 | S2 | 1664 | A |
| 19 | S2 | 1665 | G |
| 19 | S2 | 1683 | C |
| 19 | S2 | 1695 | A |
| 19 | S2 | 1699 | A |
| 19 | S2 | 1715 | A |
| 19 | S2 | 1721 | U |
| 19 | S2 | 1722 | G |
| 19 | S2 | 1744 | G |
| 19 | S2 | 1745 | A |
| 19 | S2 | 1752 | C |
| 19 | S2 | 1753 | C |
| 19 | S2 | 1754 | G |
| 19 | S2 | 1755 | C |
| 19 | S2 | 1757 | G |
| 19 | S2 | 1758 | G |
| 19 | S2 | 1759 | G |
| 19 | S2 | 1761 | U |
| 19 | S2 | 1772 | C |
| 19 | S2 | 1773 | C |
| 19 | S2 | 1774 | C |
| 19 | S2 | 1777 | G |
| 19 | S2 | 1783 | C |
| 19 | S2 | 1784 | G |
| 19 | S2 | 1786 | U |
| 19 | S2 | 1798 | C |
| 19 | S2 | 1810 | U |
| 19 | S2 | 1819 | A |
| 19 | S2 | 1824 | A |
| 19 | S2 | 1825 | A |
| 19 | S2 | 1835 | A |
| 19 | S2 | 1838 | U |
| 19 | S2 | 1849 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 1851 | MA6 |
| 19 | S2 | 1861 | G |
| 19 | S2 | 1862 | G |
| 19 | S2 | 1863 | A |
| 19 | S2 | 1864 | U |
| 19 | S2 | 1865 | C |
| 37 | At | 8 | U |
| 37 | At | 9 | A |
| 37 | At | 10 | G |
| 37 | At | 14 | A |
| 37 | At | 21 | A |
| 37 | At | 22 | U |
| 37 | At | 26 | G |
| 37 | At | 36 | C |
| 37 | At | 47 | U |
| 37 | At | 48 | C |
| 37 | At | 49 | C |
| 37 | At | 58 | A |
| 37 | At | 60 | A |
| 37 | At | 61 | C |
| 37 | At | 63 | G |
| 37 | At | 67 | G |
| 38 | Pt | 8 | U |
| 38 | Pt | 9 | A |
| 38 | Pt | 13 | U |
| 38 | Pt | 21 | A |
| 38 | Pt | 31 | C |
| 38 | Pt | 46 | G |
| 38 | Pt | 47 | U |
| 38 | Pt | 48 | C |
| 38 | Pt | 49 | C |
| 38 | Pt | 58 | A |
| 38 | Pt | 67 | G |
| 38 | Pt | 71 | A |
| 38 | Pt | 72 | C |
| 38 | Pt | 74 | C |
| 38 | Pt | 76 | A |
| 40 | L5 | 25 | A |
| 40 | L5 | 30 | C |
| 40 | L5 | 39 | A |
| 40 | L5 | 42 | A |
| 40 | L5 | 48 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 56 | A |
| 40 | L5 | 59 | A |
| 40 | L5 | 64 | A |
| 40 | L5 | 65 | A |
| 40 | L5 | 73 | A |
| 40 | L5 | 91 | G |
| 40 | L5 | 104 | G |
| 40 | L5 | 109 | G |
| 40 | L5 | 110 | C |
| 40 | L5 | 116 | G |
| 40 | L5 | 119 | G |
| 40 | L5 | 120 | A |
| 40 | L5 | 122 | U |
| 40 | L5 | 127 | G |
| 40 | L5 | 132 | G |
| 40 | L5 | 133 | C |
| 40 | L5 | 134 | G |
| 40 | L5 | 135 | G |
| 40 | L5 | 136 | C |
| 40 | L5 | 144 | G |
| 40 | L5 | 159 | C |
| 40 | L5 | 164 | G |
| 40 | L5 | 165 | A |
| 40 | L5 | 171 | U |
| 40 | L5 | 172 | C |
| 40 | L5 | 176 | G |
| 40 | L5 | 182 | G |
| 40 | L5 | 183 | C |
| 40 | L5 | 184 | U |
| 40 | L5 | 185 | C |
| 40 | L5 | 186 | G |
| 40 | L5 | 188 | G |
| 40 | L5 | 197 | A |
| 40 | L5 | 200 | U |
| 40 | L5 | 209 | U |
| 40 | L5 | 213 | G |
| 40 | L5 | 216 | C |
| 40 | L5 | 218 | A |
| 40 | L5 | 220 | C |
| 40 | L5 | 233 | U |
| 40 | L5 | 234 | G |
| 40 | L5 | 235 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 255 | C |
| 40 | L5 | 256 | G |
| 40 | L5 | 261 | G |
| 40 | L5 | 264 | C |
| 40 | L5 | 265 | C |
| 40 | L5 | 266 | C |
| 40 | L5 | 267 | G |
| 40 | L5 | 275 | C |
| 40 | L5 | 280 | G |
| 40 | L5 | 297 | U |
| 40 | L5 | 306 | A |
| 40 | L5 | 310 | G |
| 40 | L5 | 315 | G |
| 40 | L5 | 316 | U |
| 40 | L5 | 340 | C |
| 40 | L5 | 357 | U |
| 40 | L5 | 373 | G |
| 40 | L5 | 387 | G |
| 40 | L5 | 388 | A |
| 40 | L5 | 396 | A |
| 40 | L5 | 399 | G |
| 40 | L5 | 407 | A |
| 40 | L5 | 409 | G |
| 40 | L5 | 410 | A |
| 40 | L5 | 412 | G |
| 40 | L5 | 413 | G |
| 40 | L5 | 431 | G |
| 40 | L5 | 432 | U |
| 40 | L5 | 440 | U |
| 40 | L5 | 446 | C |
| 40 | L5 | 449 | C |
| 40 | L5 | 450 | G |
| 40 | L5 | 452 | A |
| 40 | L5 | 453 | G |
| 40 | L5 | 454 | U |
| 40 | L5 | 456 | C |
| 40 | L5 | 457 | G |
| 40 | L5 | 465 | G |
| 40 | L5 | 467 | U |
| 40 | L5 | 479 | G |
| 40 | L5 | 484 | U |
| 40 | L5 | 485 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 486 | C |
| 40 | L5 | 489 | C |
| 40 | L5 | 494 | U |
| 40 | L5 | 495 | C |
| 40 | L5 | 496 | G |
| 40 | L5 | 497 | G |
| 40 | L5 | 498 | C |
| 40 | L5 | 502 | C |
| 40 | L5 | 503 | C |
| 40 | L5 | 504 | G |
| 40 | L5 | 505 | G |
| 40 | L5 | 509 | A |
| 40 | L5 | 510 | U |
| 40 | L5 | 512 | U |
| 40 | L5 | 513 | U |
| 40 | L5 | 514 | U |
| 40 | L5 | 516 | C |
| 40 | L5 | 517 | C |
| 40 | L5 | 518 | G |
| 40 | L5 | 519 | C |
| 40 | L5 | 643 | C |
| 40 | L5 | 654 | C |
| 40 | L5 | 655 | C |
| 40 | L5 | 656 | C |
| 40 | L5 | 657 | C |
| 40 | L5 | 658 | C |
| 40 | L5 | 659 | G |
| 40 | L5 | 666 | G |
| 40 | L5 | 667 | A |
| 40 | L5 | 668 | C |
| 40 | L5 | 672 | C |
| 40 | L5 | 673 | C |
| 40 | L5 | 682 | G |
| 40 | L5 | 686 | A |
| 40 | L5 | 687 | U |
| 40 | L5 | 696 | C |
| 40 | L5 | 704 | C |
| 40 | L5 | 708 | G |
| 40 | L5 | 719 | C |
| 40 | L5 | 731 | G |
| 40 | L5 | 738 | C |
| 40 | L5 | 739 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 742 | G |
| 40 | L5 | 758 | G |
| 40 | L5 | 759 | G |
| 40 | L5 | 904 | C |
| 40 | L5 | 905 | C |
| 40 | L5 | 911 | U |
| 40 | L5 | 912 | G |
| 40 | L5 | 913 | U |
| 40 | L5 | 914 | U |
| 40 | L5 | 915 | A |
| 40 | L5 | 917 | A |
| 40 | L5 | 923 | C |
| 40 | L5 | 924 | C |
| 40 | L5 | 926 | G |
| 40 | L5 | 927 | G |
| 40 | L5 | 932 | A |
| 40 | L5 | 933 | G |
| 40 | L5 | 935 | A |
| 40 | L5 | 936 | C |
| 40 | L5 | 941 | C |
| 40 | L5 | 943 | A |
| 40 | L5 | 945 | U |
| 40 | L5 | 956 | A |
| 40 | L5 | 959 | G |
| 40 | L5 | 960 | A |
| 40 | L5 | 961 | G |
| 40 | L5 | 962 | C |
| 40 | L5 | 965 | G |
| 40 | L5 | 966 | A |
| 40 | L5 | 967 | C |
| 40 | L5 | 968 | C |
| 40 | L5 | 969 | C |
| 40 | L5 | 970 | G |
| 40 | L5 | 982 | U |
| 40 | L5 | 985 | C |
| 40 | L5 | 986 | C |
| 40 | L5 | 989 | U |
| 40 | L5 | 1070 | G |
| 40 | L5 | 1071 | C |
| 40 | L5 | 1072 | C |
| 40 | L5 | 1075 | G |
| 40 | L5 | 1076 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 1082 | C |
| 40 | L5 | 1083 | U |
| 40 | L5 | 1095 | A |
| 40 | L5 | 1168 | G |
| 40 | L5 | 1169 | G |
| 40 | L5 | 1171 | G |
| 40 | L5 | 1172 | C |
| 40 | L5 | 1173 | G |
| 40 | L5 | 1175 | A |
| 40 | L5 | 1177 | U |
| 40 | L5 | 1179 | U |
| 40 | L5 | 1180 | C |
| 40 | L5 | 1181 | C |
| 40 | L5 | 1182 | C |
| 40 | L5 | 1183 | C |
| 40 | L5 | 1184 | A |
| 40 | L5 | 1187 | G |
| 40 | L5 | 1189 | G |
| 40 | L5 | 1200 | G |
| 40 | L5 | 1202 | C |
| 40 | L5 | 1203 | G |
| 40 | L5 | 1205 | G |
| 40 | L5 | 1210 | C |
| 40 | L5 | 1211 | G |
| 40 | L5 | 1215 | C |
| 40 | L5 | 1218 | G |
| 40 | L5 | 1219 | G |
| 40 | L5 | 1222 | A |
| 40 | L5 | 1242 | G |
| 40 | L5 | 1246 | G |
| 40 | L5 | 1247 | U |
| 40 | L5 | 1253 | G |
| 40 | L5 | 1254 | A |
| 40 | L5 | 1256 | G |
| 40 | L5 | 1257 | A |
| 40 | L5 | 1258 | G |
| 40 | L5 | 1263 | A |
| 40 | L5 | 1266 | G |
| 40 | L5 | 1267 | C |
| 40 | L5 | 1269 | G |
| 40 | L5 | 1270 | A |
| 40 | L5 | 1271 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 1272 | C |
| 40 | L5 | 1273 | G |
| 40 | L5 | 1275 | G |
| 40 | L5 | 1280 | C |
| 40 | L5 | 1284 | G |
| 40 | L5 | 1287 | G |
| 40 | L5 | 1294 | A |
| 40 | L5 | 1295 | C |
| 40 | L5 | 1296 | G |
| 40 | L5 | 1301 | C |
| 40 | L5 | 1314 | C |
| 40 | L5 | 1326 | A2M |
| 40 | L5 | 1344 | C |
| 40 | L5 | 1354 | A |
| 40 | L5 | 1359 | G |
| 40 | L5 | 1364 | U |
| 40 | L5 | 1365 | C |
| 40 | L5 | 1366 | G |
| 40 | L5 | 1367 | C |
| 40 | L5 | 1370 | G |
| 40 | L5 | 1379 | C |
| 40 | L5 | 1381 | U |
| 40 | L5 | 1387 | A |
| 40 | L5 | 1394 | G |
| 40 | L5 | 1398 | A |
| 40 | L5 | 1399 | G |
| 40 | L5 | 1404 | G |
| 40 | L5 | 1407 | C |
| 40 | L5 | 1408 | G |
| 40 | L5 | 1409 | C |
| 40 | L5 | 1410 | U |
| 40 | L5 | 1415 | G |
| 40 | L5 | 1417 | C |
| 40 | L5 | 1420 | A |
| 40 | L5 | 1433 | A |
| 40 | L5 | 1437 | C |
| 40 | L5 | 1438 | U |
| 40 | L5 | 1439 | C |
| 40 | L5 | 1442 | C |
| 40 | L5 | 1443 | A |
| 40 | L5 | 1444 | G |
| 40 | L5 | 1445 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 1446 | C |
| 40 | L5 | 1447 | C |
| 40 | L5 | 1457 | G |
| 40 | L5 | 1465 | G |
| 40 | L5 | 1472 | C |
| 40 | L5 | 1482 | G |
| 40 | L5 | 1483 | C |
| 40 | L5 | 1497 | A |
| 40 | L5 | 1498 | G |
| 40 | L5 | 1502 | G |
| 40 | L5 | 1517 | G |
| 40 | L5 | 1523 | A |
| 40 | L5 | 1524 | A2M |
| 40 | L5 | 1534 | A2M |
| 40 | L5 | 1536 | PSU |
| 40 | L5 | 1537 | A |
| 40 | L5 | 1547 | A |
| 40 | L5 | 1562 | G |
| 40 | L5 | 1566 | C |
| 40 | L5 | 1574 | G |
| 40 | L5 | 1578 | U |
| 40 | L5 | 1591 | U |
| 40 | L5 | 1596 | U |
| 40 | L5 | 1597 | G |
| 40 | L5 | 1624 | G |
| 40 | L5 | 1625 | OMG |
| 40 | L5 | 1631 | A |
| 40 | L5 | 1633 | G |
| 40 | L5 | 1634 | A |
| 40 | L5 | 1641 | G |
| 40 | L5 | 1654 | G |
| 40 | L5 | 1660 | U |
| 40 | L5 | 1661 | C |
| 40 | L5 | 1676 | C |
| 40 | L5 | 1677 | PSU |
| 40 | L5 | 1680 | G |
| 40 | L5 | 1697 | G |
| 40 | L5 | 1699 | A |
| 40 | L5 | 1700 | G |
| 40 | L5 | 1701 | A |
| 40 | L5 | 1702 | C |
| 40 | L5 | 1703 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 1704 | C |
| 40 | L5 | 1705 | G |
| 40 | L5 | 1718 | C |
| 40 | L5 | 1719 | A |
| 40 | L5 | 1721 | G |
| 40 | L5 | 1729 | A |
| 40 | L5 | 1731 | C |
| 40 | L5 | 1742 | A |
| 40 | L5 | 1757 | U |
| 40 | L5 | 1758 | G |
| 40 | L5 | 1760 | G |
| 40 | L5 | 1761 | G |
| 40 | L5 | 1763 | C |
| 40 | L5 | 1764 | G |
| 40 | L5 | 1765 | A |
| 40 | L5 | 1766 | A |
| 40 | L5 | 1767 | A |
| 40 | L5 | 1768 | C |
| 40 | L5 | 1770 | A |
| 40 | L5 | 1787 | A |
| 40 | L5 | 1803 | G |
| 40 | L5 | 1804 | A |
| 40 | L5 | 1806 | G |
| 40 | L5 | 1810 | G |
| 40 | L5 | 1815 | G |
| 40 | L5 | 1820 | C |
| 40 | L5 | 1821 | G |
| 40 | L5 | 1822 | U |
| 40 | L5 | 1833 | G |
| 40 | L5 | 1836 | G |
| 40 | L5 | 1837 | A |
| 40 | L5 | 1842 | G |
| 40 | L5 | 1855 | G |
| 40 | L5 | 1869 | G |
| 40 | L5 | 1888 | A |
| 40 | L5 | 1893 | C |
| 40 | L5 | 1897 | A |
| 40 | L5 | 1916 | G |
| 40 | L5 | 1917 | A |
| 40 | L5 | 1918 | U |
| 40 | L5 | 1919 | G |
| 40 | L5 | 1920 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 1921 | C |
| 40 | L5 | 1922 | G |
| 40 | L5 | 1925 | G |
| 40 | L5 | 1931 | C |
| 40 | L5 | 1932 | A |
| 40 | L5 | 1936 | C |
| 40 | L5 | 1938 | C |
| 40 | L5 | 1948 | G |
| 40 | L5 | 1961 | G |
| 40 | L5 | 1962 | A |
| 40 | L5 | 1965 | G |
| 40 | L5 | 1967 | A |
| 40 | L5 | 1971 | C |
| 40 | L5 | 1972 | G |
| 40 | L5 | 1974 | U |
| 40 | L5 | 1975 | G |
| 40 | L5 | 1978 | C |
| 40 | L5 | 1980 | U |
| 40 | L5 | 1982 | G |
| 40 | L5 | 1983 | A |
| 40 | L5 | 1984 | A |
| 40 | L5 | 1985 | G |
| 40 | L5 | 1986 | U |
| 40 | L5 | 1987 | C |
| 40 | L5 | 1989 | G |
| 40 | L5 | 1991 | A |
| 40 | L5 | 1992 | U |
| 40 | L5 | 1995 | G |
| 40 | L5 | 1997 | U |
| 40 | L5 | 1998 | A |
| 40 | L5 | 1999 | A |
| 40 | L5 | 2001 | G |
| 40 | L5 | 2002 | A |
| 40 | L5 | 2003 | G |
| 40 | L5 | 2011 | C |
| 40 | L5 | 2014 | C |
| 40 | L5 | 2017 | A |
| 40 | L5 | 2018 | C |
| 40 | L5 | 2024 | G |
| 40 | L5 | 2025 | A |
| 40 | L5 | 2026 | A |
| 40 | L5 | 2046 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 2048 | U |
| 40 | L5 | 2052 | G |
| 40 | L5 | 2055 | G |
| 40 | L5 | 2056 | G |
| 40 | L5 | 2069 | A |
| 40 | L5 | 2084 | C |
| 40 | L5 | 2085 | G |
| 40 | L5 | 2092 | G |
| 40 | L5 | 2093 | A |
| 40 | L5 | 2094 | G |
| 40 | L5 | 2095 | A |
| 40 | L5 | 2097 | U |
| 40 | L5 | 2098 | G |
| 40 | L5 | 2100 | A |
| 40 | L5 | 2102 | G |
| 40 | L5 | 2103 | G |
| 40 | L5 | 2105 | A |
| 40 | L5 | 2107 | C |
| 40 | L5 | 2110 | C |
| 40 | L5 | 2112 | G |
| 40 | L5 | 2250 | C |
| 40 | L5 | 2252 | G |
| 40 | L5 | 2253 | A |
| 40 | L5 | 2256 | C |
| 40 | L5 | 2258 | C |
| 40 | L5 | 2259 | G |
| 40 | L5 | 2261 | G |
| 40 | L5 | 2262 | G |
| 40 | L5 | 2289 | C |
| 40 | L5 | 2300 | A |
| 40 | L5 | 2301 | G |
| 40 | L5 | 2313 | A |
| 40 | L5 | 2316 | G |
| 40 | L5 | 2322 | G |
| 40 | L5 | 2331 | G |
| 40 | L5 | 2333 | G |
| 40 | L5 | 2348 | G |
| 40 | L5 | 2351 | OMC |
| 40 | L5 | 2360 | A |
| 40 | L5 | 2389 | A |
| 40 | L5 | 2395 | A |
| 40 | L5 | 2397 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 2398 | U |
| 40 | L5 | 2402 | G |
| 40 | L5 | 2410 | C |
| 40 | L5 | 2417 | A |
| 40 | L5 | 2425 | U |
| 40 | L5 | 2453 | A |
| 40 | L5 | 2464 | C |
| 40 | L5 | 2465 | C |
| 40 | L5 | 2469 | C |
| 40 | L5 | 2470 | C |
| 40 | L5 | 2471 | G |
| 40 | L5 | 2474 | G |
| 40 | L5 | 2475 | G |
| 40 | L5 | 2478 | C |
| 40 | L5 | 2479 | G |
| 40 | L5 | 2483 | G |
| 40 | L5 | 2484 | A |
| 40 | L5 | 2485 | U |
| 40 | L5 | 2487 | G |
| 40 | L5 | 2488 | C |
| 40 | L5 | 2489 | C |
| 40 | L5 | 2490 | U |
| 40 | L5 | 2504 | C |
| 40 | L5 | 2505 | C |
| 40 | L5 | 2506 | G |
| 40 | L5 | 2507 | A |
| 40 | L5 | 2513 | A |
| 40 | L5 | 2519 | U |
| 40 | L5 | 2537 | A |
| 40 | L5 | 2544 | G |
| 40 | L5 | 2546 | G |
| 40 | L5 | 2547 | G |
| 40 | L5 | 2554 | U |
| 40 | L5 | 2555 | G |
| 40 | L5 | 2559 | G |
| 40 | L5 | 2560 | C |
| 40 | L5 | 2565 | A |
| 40 | L5 | 2581 | A |
| 40 | L5 | 2583 | C |
| 40 | L5 | 2586 | G |
| 40 | L5 | 2587 | A |
| 40 | L5 | 2589 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 2601 | A |
| 40 | L5 | 2607 | C |
| 40 | L5 | 2618 | G |
| 40 | L5 | 2627 | C |
| 40 | L5 | 2643 | G |
| 40 | L5 | 2653 | C |
| 40 | L5 | 2658 | G |
| 40 | L5 | 2662 | G |
| 40 | L5 | 2669 | C |
| 40 | L5 | 2673 | G |
| 40 | L5 | 2675 | G |
| 40 | L5 | 2676 | A |
| 40 | L5 | 2686 | G |
| 40 | L5 | 2687 | U |
| 40 | L5 | 2694 | G |
| 40 | L5 | 2695 | A |
| 40 | L5 | 2696 | A |
| 40 | L5 | 2702 | C |
| 40 | L5 | 2703 | G |
| 40 | L5 | 2706 | G |
| 40 | L5 | 2708 | U |
| 40 | L5 | 2709 | C |
| 40 | L5 | 2711 | G |
| 40 | L5 | 2719 | C |
| 40 | L5 | 2721 | G |
| 40 | L5 | 2724 | G |
| 40 | L5 | 2726 | G |
| 40 | L5 | 2739 | C |
| 40 | L5 | 2742 | G |
| 40 | L5 | 2743 | A |
| 40 | L5 | 2754 | G |
| 40 | L5 | 2759 | G |
| 40 | L5 | 2761 | U |
| 40 | L5 | 2763 | U |
| 40 | L5 | 2769 | U |
| 40 | L5 | 2770 | C |
| 40 | L5 | 2788 | U |
| 40 | L5 | 2790 | U |
| 40 | L5 | 2794 | C |
| 40 | L5 | 2799 | G |
| 40 | L5 | 2806 | A |
| 40 | L5 | 2812 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 2814 | C |
| 40 | L5 | 2826 | U |
| 40 | L5 | 2827 | G |
| 40 | L5 | 2828 | U |
| 40 | L5 | 2829 | U |
| 40 | L5 | 2833 | A |
| 40 | L5 | 2835 | A |
| 40 | L5 | 2855 | G |
| 40 | L5 | 2877 | G |
| 40 | L5 | 2895 | A |
| 40 | L5 | 2900 | U |
| 40 | L5 | 2902 | G |
| 40 | L5 | 2903 | G |
| 40 | L5 | 2904 | U |
| 40 | L5 | 2905 | C |
| 40 | L5 | 2906 | G |
| 40 | L5 | 2907 | G |
| 40 | L5 | 2908 | U |
| 40 | L5 | 3588 | C |
| 40 | L5 | 3590 | G |
| 40 | L5 | 3591 | C |
| 40 | L5 | 3592 | G |
| 40 | L5 | 3594 | C |
| 40 | L5 | 3595 | U |
| 40 | L5 | 3596 | A |
| 40 | L5 | 3597 | G |
| 40 | L5 | 3599 | A |
| 40 | L5 | 3604 | A |
| 40 | L5 | 3605 | C |
| 40 | L5 | 3615 | G |
| 40 | L5 | 3616 | U |
| 40 | L5 | 3617 | G |
| 40 | L5 | 3626 | G |
| 40 | L5 | 3630 | A |
| 40 | L5 | 3635 | A |
| 40 | L5 | 3643 | A |
| 40 | L5 | 3644 | U |
| 40 | L5 | 3646 | A |
| 40 | L5 | 3652 | A |
| 40 | L5 | 3662 | A |
| 40 | L5 | 3664 | G |
| 40 | L5 | 3673 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 3674 | G |
| 40 | L5 | 3680 | U |
| 40 | L5 | 3698 | G |
| 40 | L5 | 3701 | OMC |
| 40 | L5 | 3710 | G |
| 40 | L5 | 3711 | A |
| 40 | L5 | 3726 | A |
| 40 | L5 | 3727 | A |
| 40 | L5 | 3746 | A |
| 40 | L5 | 3748 | A |
| 40 | L5 | 3753 | G |
| 40 | L5 | 3760 | A |
| 40 | L5 | 3764 | U |
| 40 | L5 | 3770 | U |
| 40 | L5 | 3771 | C |
| 40 | L5 | 3774 | A |
| 40 | L5 | 3775 | A |
| 40 | L5 | 3776 | G |
| 40 | L5 | 3777 | G |
| 40 | L5 | 3778 | U |
| 40 | L5 | 3785 | A2M |
| 40 | L5 | 3786 | U |
| 40 | L5 | 3792 | OMG |
| 40 | L5 | 3811 | G |
| 40 | L5 | 3812 | C |
| 40 | L5 | 3817 | A |
| 40 | L5 | 3819 | G |
| 40 | L5 | 3822 | PSU |
| 40 | L5 | 3824 | A |
| 40 | L5 | 3838 | U |
| 40 | L5 | 3840 | U |
| 40 | L5 | 3876 | A |
| 40 | L5 | 3877 | A |
| 40 | L5 | 3878 | C |
| 40 | L5 | 3879 | G |
| 40 | L5 | 3890 | A |
| 40 | L5 | 3892 | U |
| 40 | L5 | 3897 | G |
| 40 | L5 | 3898 | G |
| 40 | L5 | 3901 | A |
| 40 | L5 | 3906 | A |
| 40 | L5 | 3907 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 3908 | A |
| 40 | L5 | 3915 | U |
| 40 | L5 | 3938 | G |
| 40 | L5 | 3939 | G |
| 40 | L5 | 3942 | A |
| 40 | L5 | 3943 | A |
| 40 | L5 | 3944 | G |
| 40 | L5 | 3946 | G |
| 40 | L5 | 3947 | A |
| 40 | L5 | 3948 | C |
| 40 | L5 | 3949 | A |
| 40 | L5 | 3950 | U |
| 40 | L5 | 3952 | A |
| 40 | L5 | 4057 | C |
| 40 | L5 | 4058 | U |
| 40 | L5 | 4059 | C |
| 40 | L5 | 4060 | U |
| 40 | L5 | 4062 | A |
| 40 | L5 | 4064 | C |
| 40 | L5 | 4065 | G |
| 40 | L5 | 4068 | U |
| 40 | L5 | 4069 | U |
| 40 | L5 | 4076 | G |
| 40 | L5 | 4093 | G |
| 40 | L5 | 4095 | G |
| 40 | L5 | 4096 | C |
| 40 | L5 | 4097 | G |
| 40 | L5 | 4098 | A |
| 40 | L5 | 4099 | G |
| 40 | L5 | 4104 | G |
| 40 | L5 | 4105 | A |
| 40 | L5 | 4107 | G |
| 40 | L5 | 4108 | G |
| 40 | L5 | 4111 | U |
| 40 | L5 | 4112 | C |
| 40 | L5 | 4114 | C |
| 40 | L5 | 4115 | G |
| 40 | L5 | 4116 | C |
| 40 | L5 | 4121 | G |
| 40 | L5 | 4122 | G |
| 40 | L5 | 4125 | C |
| 40 | L5 | 4127 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 4133 | C |
| 40 | L5 | 4140 | C |
| 40 | L5 | 4141 | G |
| 40 | L5 | 4142 | C |
| 40 | L5 | 4143 | G |
| 40 | L5 | 4144 | C |
| 40 | L5 | 4145 | C |
| 40 | L5 | 4146 | G |
| 40 | L5 | 4156 | G |
| 40 | L5 | 4162 | C |
| 40 | L5 | 4163 | U |
| 40 | L5 | 4170 | A |
| 40 | L5 | 4183 | G |
| 40 | L5 | 4184 | G |
| 40 | L5 | 4191 | G |
| 40 | L5 | 4203 | A |
| 40 | L5 | 4212 | A |
| 40 | L5 | 4219 | A |
| 40 | L5 | 4220 | 6MZ |
| 40 | L5 | 4222 | G |
| 40 | L5 | 4229 | U |
| 40 | L5 | 4232 | U |
| 40 | L5 | 4233 | A |
| 40 | L5 | 4234 | A |
| 40 | L5 | 4241 | C |
| 40 | L5 | 4243 | C |
| 40 | L5 | 4249 | G |
| 40 | L5 | 4251 | A |
| 40 | L5 | 4254 | G |
| 40 | L5 | 4257 | A |
| 40 | L5 | 4258 | C |
| 40 | L5 | 4265 | U |
| 40 | L5 | 4268 | A |
| 40 | L5 | 4273 | A |
| 40 | L5 | 4279 | A |
| 40 | L5 | 4280 | A |
| 40 | L5 | 4287 | G |
| 40 | L5 | 4291 | G |
| 40 | L5 | 4295 | U |
| 40 | L5 | 4304 | A |
| 40 | L5 | 4305 | G |
| 40 | L5 | 4306 | OMU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 4314 | C |
| 40 | L5 | 4319 | C |
| 40 | L5 | 4326 | G |
| 40 | L5 | 4329 | G |
| 40 | L5 | 4330 | G |
| 40 | L5 | 4332 | C |
| 40 | L5 | 4349 | C |
| 40 | L5 | 4350 | C |
| 40 | L5 | 4354 | U |
| 40 | L5 | 4373 | G |
| 40 | L5 | 4377 | G |
| 40 | L5 | 4378 | A |
| 40 | L5 | 4379 | A |
| 40 | L5 | 4381 | A |
| 40 | L5 | 4387 | C |
| 40 | L5 | 4394 | A |
| 40 | L5 | 4422 | A |
| 40 | L5 | 4438 | U |
| 40 | L5 | 4444 | C |
| 40 | L5 | 4447 | 5MC |
| 40 | L5 | 4448 | G |
| 40 | L5 | 4449 | A |
| 40 | L5 | 4464 | A |
| 40 | L5 | 4466 | C |
| 40 | L5 | 4475 | G |
| 40 | L5 | 4488 | A |
| 40 | L5 | 4500 | PSU |
| 40 | L5 | 4512 | U |
| 40 | L5 | 4513 | A |
| 40 | L5 | 4519 | C |
| 40 | L5 | 4523 | A2M |
| 40 | L5 | 4524 | G |
| 40 | L5 | 4528 | G |
| 40 | L5 | 4545 | G |
| 40 | L5 | 4548 | A |
| 40 | L5 | 4549 | G |
| 40 | L5 | 4560 | C |
| 40 | L5 | 4569 | U |
| 40 | L5 | 4575 | G |
| 40 | L5 | 4581 | G |
| 40 | L5 | 4584 | A |
| 40 | L5 | 4590 | A2M |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 4599 | A |
| 40 | L5 | 4601 | U |
| 40 | L5 | 4610 | A |
| 40 | L5 | 4618 | OMG |
| 40 | L5 | 4635 | A |
| 40 | L5 | 4636 | PSU |
| 40 | L5 | 4637 | OMG |
| 40 | L5 | 4652 | G |
| 40 | L5 | 4656 | A |
| 40 | L5 | 4670 | C |
| 40 | L5 | 4671 | C |
| 40 | L5 | 4672 | A |
| 40 | L5 | 4693 | C |
| 40 | L5 | 4694 | G |
| 40 | L5 | 4695 | C |
| 40 | L5 | 4700 | A |
| 40 | L5 | 4707 | A |
| 40 | L5 | 4708 | A |
| 40 | L5 | 4709 | U |
| 40 | L5 | 4719 | G |
| 40 | L5 | 4734 | A |
| 40 | L5 | 4740 | G |
| 40 | L5 | 4741 | C |
| 40 | L5 | 4742 | G |
| 40 | L5 | 4745 | G |
| 40 | L5 | 4750 | G |
| 40 | L5 | 4754 | G |
| 40 | L5 | 4757 | C |
| 40 | L5 | 4759 | C |
| 40 | L5 | 4761 | G |
| 40 | L5 | 4765 | G |
| 40 | L5 | 4771 | C |
| 40 | L5 | 4772 | C |
| 40 | L5 | 4775 | C |
| 40 | L5 | 4776 | G |
| 40 | L5 | 4859 | C |
| 40 | L5 | 4860 | G |
| 40 | L5 | 4862 | G |
| 40 | L5 | 4864 | U |
| 40 | L5 | 4867 | G |
| 40 | L5 | 4870 | G |
| 40 | L5 | 4871 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 4875 | G |
| 40 | L5 | 4876 | U |
| 40 | L5 | 4877 | G |
| 40 | L5 | 4881 | U |
| 40 | L5 | 4882 | U |
| 40 | L5 | 4883 | C |
| 40 | L5 | 4889 | G |
| 40 | L5 | 4895 | C |
| 40 | L5 | 4896 | G |
| 40 | L5 | 4898 | G |
| 40 | L5 | 4899 | G |
| 40 | L5 | 4900 | C |
| 40 | L5 | 4901 | G |
| 40 | L5 | 4910 | G |
| 40 | L5 | 4912 | G |
| 40 | L5 | 4914 | C |
| 40 | L5 | 4923 | C |
| 40 | L5 | 4925 | U |
| 40 | L5 | 4927 | G |
| 40 | L5 | 4928 | C |
| 40 | L5 | 4934 | A |
| 40 | L5 | 4937 | C |
| 40 | L5 | 4940 | C |
| 40 | L5 | 4941 | G |
| 40 | L5 | 4943 | A |
| 40 | L5 | 4944 | C |
| 40 | L5 | 4951 | G |
| 40 | L5 | 4960 | G |
| 40 | L5 | 4963 | G |
| 40 | L5 | 4976 | U |
| 40 | L5 | 4985 | U |
| 40 | L5 | 4988 | U |
| 40 | L5 | 4989 | U |
| 40 | L5 | 4990 | C |
| 40 | L5 | 4991 | U |
| 40 | L5 | 4995 | U |
| 40 | L5 | 5006 | U |
| 40 | L5 | 5013 | C |
| 40 | L5 | 5014 | A |
| 40 | L5 | 5017 | G |
| 40 | L5 | 5020 | G |
| 40 | L5 | 5023 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | L5 | 5024 | C |
| 40 | L5 | 5027 | C |
| 40 | L5 | 5028 | G |
| 40 | L5 | 5030 | U |
| 40 | L5 | 5034 | A |
| 40 | L5 | 5041 | G |
| 40 | L5 | 5050 | C |
| 40 | L5 | 5054 | C |
| 40 | L5 | 5055 | G |
| 40 | L5 | 5058 | A |
| 40 | L5 | 5061 | A |
| 40 | L5 | 5062 | G |
| 40 | L5 | 5069 | U |
| 41 | L7 | 7 | G |
| 41 | L7 | 11 | A |
| 41 | L7 | 22 | A |
| 41 | L7 | 24 | C |
| 41 | L7 | 37 | G |
| 41 | L7 | 38 | U |
| 41 | L7 | 53 | U |
| 41 | L7 | 63 | C |
| 41 | L7 | 64 | G |
| 41 | L7 | 89 | G |
| 41 | L7 | 91 | C |
| 41 | L7 | 97 | G |
| 41 | L7 | 100 | A |
| 41 | L7 | 102 | U |
| 41 | L7 | 110 | G |
| 41 | L7 | 111 | C |
| 42 | L8 | 34 | U |
| 42 | L8 | 35 | C |
| 42 | L8 | 38 | U |
| 42 | L8 | 52 | A |
| 42 | L8 | 59 | A |
| 42 | L8 | 62 | A |
| 42 | L8 | 63 | U |
| 42 | L8 | 80 | A |
| 42 | L8 | 82 | A |
| 42 | L8 | 83 | C |
| 42 | L8 | 84 | A |
| 42 | L8 | 85 | U |
| 42 | L8 | 86 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 42 | L8 | 87 | G |
| 42 | L8 | 94 | G |
| 42 | L8 | 103 | A |
| 42 | L8 | 105 | C |
| 42 | L8 | 111 | U |
| 42 | L8 | 114 | G |
| 42 | L8 | 123 | U |
| 42 | L8 | 124 | U |
| 42 | L8 | 125 | C |
| 42 | L8 | 126 | C |
| 42 | L8 | 127 | U |
| 42 | L8 | 147 | G |
| 42 | L8 | 150 | C |
| 42 | L8 | 151 | G |

All (22) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 19 | S2 | 291 | G |
| 19 | S2 | 531 | A |
| 19 | S2 | 563 | G |
| 19 | S2 | 688 | U |
| 40 | L5 | 183 | C |
| 40 | L5 | 406 | C |
| 40 | L5 | 914 | U |
| 40 | L5 | 1082 | C |
| 40 | L5 | 1176 | C |
| 40 | L5 | 1366 | G |
| 40 | L5 | 1633 | G |
| 40 | L5 | 1977 | C |
| 40 | L5 | 2416 | G |
| 40 | L5 | 2675 | G |
| 40 | L5 | 2760 | G |
| 40 | L5 | 3673 | C |
| 40 | L5 | 3726 | A |
| 40 | L5 | 3951 | G |
| 40 | L5 | 4447 | 5MC |
| 40 | L5 | 4600 | G |
| 40 | L5 | 4699 | U |
| 40 | L5 | 4913 | G |

## 5.4 Non-standard residues in protein, DNA, RNA chains (i)

178 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\| > 2$ | Counts | RMSZ | $\#\|Z\| > 2$ |
| 40 | PSU | L5 | 1862 | 40 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.89 | 4 (19%) |
| 19 | PSU | S2 | 686 | 19 | 18,21,22 | 1.16 | 1 (5%) | 21,30,33 | 1.89 | 4 (19%) |
| 19 | MA6 | S2 | 1850 | 19 | 19,26,27 | 3.13 | 9 (47%) | 18,38,41 | 3.39 | 5 (27%) |
| 40 | PSU | L5 | 4500 | 40 | 18,21,22 | 1.14 | 1 (5%) | 21,30,33 | 1.95 | 5 (23%) |
| 19 | A2M | S2 | 576 | 19 | 18,25,26 | 1.26 | 2 (11%) | 20,36,39 | 1.96 | 5 (25%) |
| 40 | PSU | L5 | 3822 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 2.01 | 6 (28%) |
| 40 | 6MZ | L5 | 4220 | 40 | 17,25,26 | 1.41 | 2 (11%) | 15,36,39 | 2.19 | 3 (20%) |
| 40 | OMG | L5 | 3744 | 40 | 19,26,27 | 1.11 | 2 (10%) | 21,38,41 | 0.85 | 1 (4%) |
| 40 | OMU | L5 | 4498 | 40 | 19,22,23 | 3.36 | 7 (36%) | 25,31,34 | 1.80 | 5 (20%) |
| 40 | 1MA | L5 | 1322 | 40 | 17,25,26 | 0.95 | 2 (11%) | 17,37,40 | 1.15 | 2 (11%) |
| 19 | PSU | S2 | 1046 | 19 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.83 | 4 (19%) |
| 40 | OMU | L5 | 4306 | 40 | 19,22,23 | 3.36 | 7 (36%) | 25,31,34 | 1.80 | 4 (16%) |
| 40 | OMG | L5 | 4196 | 38,40 | 19,26,27 | 1.14 | 2 (10%) | 21,38,41 | 0.86 | 1 (4%) |
| 19 | PSU | S2 | 93 | 19 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.82 | 4 (19%) |
| 40 | OMG | L5 | 2364 | 40,86 | 19,26,27 | 1.13 | 2 (10%) | 21,38,41 | 0.85 | 1 (4%) |
| 19 | OMC | S2 | 1391 | 19 | 19,22,23 | 0.52 | 0 | 25,31,34 | 0.91 | 1 (4%) |
| 19 | OMG | S2 | 601 | 19 | 19,26,27 | 1.18 | 2 (10%) | 21,38,41 | 0.92 | 1 (4%) |
| 19 | PSU | S2 | 1367 | 19 | 18,21,22 | 1.12 | 1 (5%) | 21,30,33 | 1.88 | 5 (23%) |
| 40 | OMC | L5 | 2861 | 40 | 19,22,23 | 0.54 | 0 | 25,31,34 | 1.03 | 2 (8%) |
| 40 | PSU | L5 | 4579 | 40 | 18,21,22 | 1.06 | 1 (5%) | 21,30,33 | 1.89 | 4 (19%) |
| 19 | A2M | S2 | 27 | 19 | 18,25,26 | 1.28 | 2 (11%) | 20,36,39 | 1.99 | 6 (30%) |
| 40 | PSU | L5 | 4296 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.91 | 5 (23%) |
| 19 | OMC | S2 | 1272 | 19 | 19,22,23 | 0.53 | 0 | 25,31,34 | 0.73 | 0 |
| 40 | PSU | L5 | 3851 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.87 | 4 (19%) |
| 19 | OMU | S2 | 1442 | 19 | 19,22,23 | 3.41 | 7 (36%) | 25,31,34 | 1.81 | 5 (20%) |
| 19 | PSU | S2 | 966 | 86,19 | 18,21,22 | 1.13 | 1 (5%) | 21,30,33 | 1.87 | 5 (23%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\|>2$ | Counts | RMSZ | $\#\|Z\|>2$ |
| 40 | PSU | L5 | 3844 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.87 | 4 (19%) |
| 19 | PSU | S2 | 866 | 19 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.87 | 5 (23%) |
| 19 | OMC | S2 | 174 | 19 | 19,22,23 | 0.51 | 0 | 25,31,34 | 0.69 | 0 |
| 40 | A2M | L5 | 400 | 40 | 18,25,26 | 1.30 | 2 (11%) | 20,36,39 | 1.94 | 6 (30%) |
| 40 | OMG | L5 | 1625 | 40 | 19,26,27 | 1.21 | 2 (10%) | 21,38,41 | 0.86 | 1 (4%) |
| 40 | A2M | L5 | 3825 | 40 | 18,25,26 | 1.27 | 2 (11%) | 20,36,39 | 1.90 | 7 (35%) |
| 40 | PSU | L5 | 4673 | 40 | 18,21,22 | 1.08 | 1 (5%) | 21,30,33 | 1.88 | 4 (19%) |
| 19 | PSU | S2 | 801 | 19 | 18,21,22 | 1.14 | 1 (5%) | 21,30,33 | 1.88 | 4 (19%) |
| 40 | PSU | L5 | 1781 | 40 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.79 | 4 (19%) |
| 19 | PSU | S2 | 649 | 19 | 18,21,22 | 1.12 | 1 (5%) | 21,30,33 | 1.94 | 5 (23%) |
| 19 | PSU | S2 | 1081 | 19 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.98 | 6 (28%) |
| 19 | A2M | S2 | 159 | 19 | 18,25,26 | 1.23 | 1 (5%) | 20,36,39 | 1.78 | 7 (35%) |
| 19 | OMU | S2 | 428 | 19 | 19,22,23 | 3.36 | 7 (36%) | 25,31,34 | 1.82 | 5 (20%) |
| 19 | OMU | S2 | 1288 | 19 | 19,22,23 | 3.46 | 7 (36%) | 25,31,34 | 1.79 | 5 (20%) |
| 40 | OMC | L5 | 1340 | 40 | 19,22,23 | 0.55 | 0 | 25,31,34 | 0.68 | 0 |
| 40 | PSU | L5 | 1536 | 40 | 18,21,22 | 1.06 | 1 (5%) | 21,30,33 | 1.92 | 4 (19%) |
| 40 | PSU | L5 | 4576 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.85 | 5 (23%) |
| 40 | A2M | L5 | 1524 | 40 | 18,25,26 | 1.30 | 2 (11%) | 20,36,39 | 2.15 | 6 (30%) |
| 19 | 4AC | S2 | 1337 | 19 | 21,24,25 | 0.37 | 0 | 28,34,37 | 0.72 | 1 (3%) |
| 40 | PSU | L5 | 3920 | 40,86 | 18,21,22 | 1.10 | 1 (5%) | 21,30,33 | 1.92 | 6 (28%) |
| 40 | PSU | L5 | 4457 | 40 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.86 | 5 (23%) |
| 19 | OMG | S2 | 1328 | 19 | 19,26,27 | 1.13 | 2 (10%) | 21,38,41 | 0.83 | 1 (4%) |
| 40 | OMG | L5 | 4392 | 40 | 19,26,27 | 1.14 | 2 (10%) | 21,38,41 | 0.83 | 1 (4%) |
| 40 | A2M | L5 | 4571 | 40 | 18,25,26 | 1.27 | 2 (11%) | 20,36,39 | 1.90 | 7 (35%) |
| 40 | A2M | L5 | 4590 | 40 | 18,25,26 | 1.22 | 2 (11%) | 20,36,39 | 1.99 | 6 (30%) |
| 40 | OMG | L5 | 4637 | 40 | 19,26,27 | 1.14 | 2 (10%) | 21,38,41 | 0.83 | 1 (4%) |
| 40 | PSU | L5 | 4628 | 40 | 18,21,22 | 1.06 | 1 (5%) | 21,30,33 | 1.89 | 5 (23%) |
| 19 | A2M | S2 | 484 | 19 | 18,25,26 | 1.23 | 1 (5%) | 20,36,39 | 1.78 | 6 (30%) |
| 19 | OMU | S2 | 172 | 19 | 19,22,23 | 3.37 | 7 (36%) | 25,31,34 | 1.83 | 4 (16%) |
| 40 | A2M | L5 | 1323 | 40 | 18,25,26 | 1.29 | 2 (11%) | 20,36,39 | 1.95 | 7 (35%) |
| 40 | 5MC | L5 | 3782 | 40,86 | 19,22,23 | 0.53 | 0 | 26,32,35 | 0.75 | 0 |
| 19 | OMG | S2 | 644 | 19 | 19,26,27 | 1.13 | 2 (10%) | 21,38,41 | 0.83 | 1 (4%) |
| 40 | OMC | L5 | 3869 | 40 | 19,22,23 | 0.54 | 0 | 25,31,34 | 0.60 | 0 |
| 19 | OMU | S2 | 1326 | 19 | 19,22,23 | 3.35 | 7 (36%) | 25,31,34 | 1.83 | 5 (20%) |
| 40 | A2M | L5 | 1534 | 40,86 | 18,25,26 | 1.29 | 2 (11%) | 20,36,39 | 2.06 | 7 (35%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\|>2$ | Counts | RMSZ | $\#\|Z\|>2$ |
| 19 | MA6 | S2 | 1851 | 19 | 19,26,27 | 1.50 | 3 (15%) | 18,38,41 | 3.44 | 3 (16%) |
| 40 | PSU | L5 | 4471 | 40 | 18,21,22 | 1.08 | 1 (5%) | 21,30,33 | 1.78 | 4 (19%) |
| 40 | PSU | L5 | 4552 | 40 | 18,21,22 | 1.12 | 1 (5%) | 21,30,33 | 1.94 | 5 (23%) |
| 19 | OMG | S2 | 436 | 19 | 19,26,27 | 1.14 | 2 (10%) | 21,38,41 | 0.81 | 1 (4%) |
| 40 | OMU | L5 | 4620 | 40 | 19,22,23 | 3.33 | 7 (36%) | 25,31,34 | 1.74 | 4 (16%) |
| 19 | A2M | S2 | 99 | 86,19 | 18,25,26 | 1.28 | 2 (11%) | 20,36,39 | 2.01 | 5 (25%) |
| 40 | A2M | L5 | 3830 | 40 | 18,25,26 | 1.28 | 2 (11%) | 20,36,39 | 2.01 | 6 (30%) |
| 40 | PSU | L5 | 4442 | 40 | 18,21,22 | 1.10 | 1 (5%) | 21,30,33 | 1.94 | 6 (28%) |
| 40 | PSU | L5 | 1792 | 40 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.84 | 4 (19%) |
| 40 | PSU | L5 | 3637 | 40 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.93 | 5 (23%) |
| 40 | PSU | L5 | 1860 | 40 | 18,21,22 | 1.13 | 1 (5%) | 21,30,33 | 1.89 | 4 (19%) |
| 40 | PSU | L5 | 4361 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.84 | 4 (19%) |
| 40 | PSU | L5 | 3853 | 40,86 | 18,21,22 | 1.10 | 1 (5%) | 21,30,33 | 1.93 | 5 (23%) |
| 40 | OMC | L5 | 2365 | 40,86 | 19,22,23 | 0.53 | 0 | 25,31,34 | 0.61 | 0 |
| 19 | A2M | S2 | 668 | 86,19 | 18,25,26 | 1.28 | 1 (5%) | 20,36,39 | 1.95 | 6 (30%) |
| 40 | A2M | L5 | 2401 | 40 | 18,25,26 | 1.27 | 2 (11%) | 20,36,39 | 1.93 | 5 (25%) |
| 19 | OMG | S2 | 1490 | 19 | 19,26,27 | 1.16 | 2 (10%) | 21,38,41 | 0.72 | 0 |
| 40 | OMC | L5 | 3887 | 40 | 19,22,23 | 0.52 | 0 | 25,31,34 | 0.65 | 0 |
| 40 | A2M | L5 | 2363 | 40,86 | 18,25,26 | 1.31 | 2 (11%) | 20,36,39 | 1.97 | 6 (30%) |
| 19 | OMU | S2 | 116 | 19 | 19,22,23 | 3.35 | 7 (36%) | 25,31,34 | 1.72 | 4 (16%) |
| 40 | PSU | L5 | 1677 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 2.08 | 6 (28%) |
| 40 | PSU | L5 | 4521 | 40,86 | 18,21,22 | 1.15 | 1 (5%) | 21,30,33 | 1.96 | 5 (23%) |
| 19 | OMC | S2 | 462 | 19 | 19,22,23 | 0.52 | 0 | 25,31,34 | 0.72 | 0 |
| 19 | PSU | S2 | 105 | 19 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.88 | 4 (19%) |
| 19 | PSU | S2 | 1174 | 19 | 18,21,22 | 1.13 | 1 (5%) | 21,30,33 | 1.86 | 4 (19%) |
| 19 | OMG | S2 | 509 | 19 | 19,26,27 | 1.15 | 2 (10%) | 21,38,41 | 0.84 | 1 (4%) |
| 40 | PSU | L5 | 2839 | 40 | 18,21,22 | 1.13 | 1 (5%) | 21,30,33 | 1.83 | 4 (19%) |
| 40 | A2M | L5 | 2815 | 40 | 18,25,26 | 1.24 | 1 (5%) | 20,36,39 | 1.81 | 7 (35%) |
| 42 | PSU | L8 | 69 | 42 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.82 | 5 (23%) |
| 40 | A2M | L5 | 3785 | 40,86 | 18,25,26 | 1.26 | 2 (11%) | 20,36,39 | 2.61 | 6 (30%) |
| 40 | A2M | L5 | 1871 | 40,86 | 18,25,26 | 1.37 | 2 (11%) | 20,36,39 | 2.11 | 6 (30%) |
| 40 | OMG | L5 | 1522 | 40 | 19,26,27 | 1.17 | 2 (10%) | 21,38,41 | 0.91 | 1 (4%) |
| 40 | OMG | L5 | 4618 | 40 | 19,26,27 | 1.14 | 2 (10%) | 21,38,41 | 0.82 | 1 (4%) |
| 40 | OMC | L5 | 2804 | 40 | 19,22,23 | 0.52 | 0 | 25,31,34 | 0.60 | 0 |
| 19 | OMC | S2 | 517 | 19 | 19,22,23 | 0.53 | 0 | 25,31,34 | 0.73 | 0 |
| 40 | OMG | L5 | 4499 | 40 | 19,26,27 | 1.14 | 2 (10%) | 21,38,41 | 0.86 | 1 (4%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\|>2$ | Counts | RMSZ | $\#\|Z\|>2$ |
| 40 | UY1 | L5 | 3818 | 40 | 19,22,23 | 4.95 | 9 (47%) | 21,31,34 | 2.01 | 5 (23%) |
| 40 | OMG | L5 | 4228 | 40 | 19,26,27 | 1.19 | 2 (10%) | 21,38,41 | 0.92 | 1 (4%) |
| 40 | PSU | L5 | 4293 | 40 | 18,21,22 | 1.14 | 1 (5%) | 21,30,33 | 1.95 | 5 (23%) |
| 19 | G7M | S2 | 1639 | 19 | 20,26,27 | 2.53 | 6 (30%) | 16,39,42 | 1.18 | 1 (6%) |
| 19 | OMU | S2 | 799 | 19 | 19,22,23 | 3.42 | 7 (36%) | 25,31,34 | 1.82 | 4 (16%) |
| 19 | PSU | S2 | 406 | 19 | 18,21,22 | 1.15 | 1 (5%) | 21,30,33 | 1.94 | 5 (23%) |
| 40 | PSU | L5 | 4312 | 40 | 18,21,22 | 1.12 | 1 (5%) | 21,30,33 | 1.86 | 4 (19%) |
| 40 | PSU | L5 | 4636 | 40 | 18,21,22 | 1.14 | 1 (5%) | 21,30,33 | 1.95 | 6 (28%) |
| 40 | PSU | L5 | 5010 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.89 | 4 (19%) |
| 19 | OMC | S2 | 1703 | 19 | 19,22,23 | 0.51 | 0 | 25,31,34 | 0.70 | 0 |
| 40 | PSU | L5 | 3639 | 40 | 18,21,22 | 1.13 | 1 (5%) | 21,30,33 | 1.92 | 5 (23%) |
| 42 | OMG | L8 | 75 | 42 | 19,26,27 | 1.14 | 2 (10%) | 21,38,41 | 0.83 | 1 (4%) |
| 19 | A2M | S2 | 1031 | 19 | 18,25,26 | 1.24 | 2 (11%) | 20,36,39 | 1.91 | 6 (30%) |
| 40 | A2M | L5 | 1326 | 40 | 18,25,26 | 1.27 | 2 (11%) | 20,36,39 | 1.90 | 8 (40%) |
| 40 | PSU | L5 | 5001 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.82 | 4 (19%) |
| 19 | OMU | S2 | 121 | 19 | 19,22,23 | 3.36 | 7 (36%) | 25,31,34 | 1.76 | 5 (20%) |
| 40 | A2M | L5 | 4523 | 40,86 | 18,25,26 | 1.36 | 2 (11%) | 20,36,39 | 2.17 | 6 (30%) |
| 40 | OMC | L5 | 4456 | 40 | 19,22,23 | 0.56 | 0 | 25,31,34 | 0.81 | 1 (4%) |
| 19 | PSU | S2 | 814 | 19 | 18,21,22 | 1.12 | 1 (5%) | 21,30,33 | 1.84 | 4 (19%) |
| 40 | PSU | L5 | 4689 | 40 | 18,21,22 | 1.08 | 1 (5%) | 21,30,33 | 1.89 | 4 (19%) |
| 19 | PSU | S2 | 651 | 19 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.89 | 4 (19%) |
| 40 | PSU | L5 | 4532 | 40 | 18,21,22 | 1.10 | 1 (5%) | 21,30,33 | 1.82 | 4 (19%) |
| 19 | OMU | S2 | 627 | 19 | 19,22,23 | 3.37 | 7 (36%) | 25,31,34 | 1.82 | 5 (20%) |
| 40 | PSU | L5 | 4299 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.89 | 4 (19%) |
| 40 | A2M | L5 | 398 | 40 | 18,25,26 | 1.27 | 2 (11%) | 20,36,39 | 2.02 | 6 (30%) |
| 40 | OMU | L5 | 4227 | 40 | 19,22,23 | 3.37 | 7 (36%) | 25,31,34 | 1.81 | 5 (20%) |
| 42 | PSU | L8 | 55 | 42 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.91 | 4 (19%) |
| 40 | OMU | L5 | 3925 | 40 | 19,22,23 | 3.36 | 7 (36%) | 25,31,34 | 1.84 | 5 (20%) |
| 40 | PSU | L5 | 4431 | 40 | 18,21,22 | 1.10 | 1 (5%) | 21,30,33 | 1.93 | 5 (23%) |
| 19 | PSU | S2 | 1004 | 19 | 18,21,22 | 1.08 | 1 (5%) | 21,30,33 | 1.86 | 4 (19%) |
| 19 | OMG | S2 | 867 | 19 | 19,26,27 | 1.09 | 2 (10%) | 21,38,41 | 0.79 | 1 (4%) |
| 40 | OMG | L5 | 1316 | 40 | 19,26,27 | 1.17 | 2 (10%) | 21,38,41 | 0.83 | 1 (4%) |
| 19 | OMG | S2 | 683 | 19 | 19,26,27 | 1.16 | 2 (10%) | 21,38,41 | 0.80 | 1 (4%) |
| 40 | PSU | L5 | 2632 | 40 | 18,21,22 | 1.08 | 1 (5%) | 21,30,33 | 2.03 | 6 (28%) |
| 40 | OMC | L5 | 3808 | 40,86 | 19,22,23 | 0.56 | 0 | 25,31,34 | 0.89 | 2 (8%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\|>2$ | Counts | RMSZ | $\#\|Z\|>2$ |
| 40 | A2M | L5 | 3718 | 40 | 18,25,26 | 1.25 | 2 (11%) | 20,36,39 | 2.09 | 5 (25%) |
| 40 | 5MC | L5 | 4447 | 40 | 19,22,23 | 0.60 | 0 | 26,32,35 | 0.63 | 0 |
| 40 | OMG | L5 | 4623 | 40 | 19,26,27 | 1.14 | 2 (10%) | 21,38,41 | 0.86 | 1 (4%) |
| 19 | A2M | S2 | 1383 | 19 | 18,25,26 | 1.28 | 2 (11%) | 20,36,39 | 2.16 | 5 (25%) |
| 19 | 4AC | S2 | 1842 | 19 | 21,24,25 | 0.37 | 0 | 28,34,37 | 0.48 | 0 |
| 40 | OMG | L5 | 3792 | 40 | 19,26,27 | 1.14 | 2 (10%) | 21,38,41 | 0.83 | 1 (4%) |
| 19 | A2M | S2 | 166 | 19 | 18,25,26 | 1.33 | 2 (11%) | 20,36,39 | 2.03 | 6 (30%) |
| 40 | OMC | L5 | 4536 | 40 | 19,22,23 | 0.54 | 0 | 25,31,34 | 0.60 | 0 |
| 19 | PSU | S2 | 1177 | 19 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.86 | 4 (19%) |
| 19 | PSU | S2 | 1045 | 19 | 18,21,22 | 1.10 | 1 (5%) | 21,30,33 | 1.85 | 4 (19%) |
| 40 | OMG | L5 | 3899 | 40 | 19,26,27 | 1.13 | 2 (10%) | 21,38,41 | 0.81 | 1 (4%) |
| 40 | PSU | L5 | 3695 | 40 | 18,21,22 | 1.10 | 1 (5%) | 21,30,33 | 1.91 | 6 (28%) |
| 40 | OMG | L5 | 3627 | 40 | 19,26,27 | 1.17 | 2 (10%) | 21,38,41 | 0.93 | 1 (4%) |
| 40 | PSU | L5 | 4353 | 40 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.91 | 5 (23%) |
| 19 | PSU | S2 | 863 | 19 | 18,21,22 | 1.10 | 1 (5%) | 21,30,33 | 1.91 | 4 (19%) |
| 40 | OMG | L5 | 4370 | 40 | 19,26,27 | 1.13 | 2 (10%) | 21,38,41 | 0.82 | 1 (4%) |
| 40 | PSU | L5 | 1744 | 40,86 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.86 | 5 (23%) |
| 40 | OMG | L5 | 2876 | 40 | 19,26,27 | 1.16 | 2 (10%) | 21,38,41 | 0.84 | 1 (4%) |
| 40 | OMC | L5 | 2422 | 40,86 | 19,22,23 | 0.58 | 0 | 25,31,34 | 0.83 | 0 |
| 40 | PSU | L5 | 4493 | 40 | 18,21,22 | 1.08 | 1 (5%) | 21,30,33 | 1.94 | 5 (23%) |
| 40 | PSU | L5 | 4973 | 40 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.90 | 4 (19%) |
| 19 | 6MZ | S2 | 1832 | 86,19 | 17,25,26 | 3.49 | 7 (41%) | 15,36,39 | 2.40 | 4 (26%) |
| 19 | B8N | S2 | 1248 | 19 | 25,29,30 | 3.28 | 6 (24%) | 28,42,45 | 1.96 | 8 (28%) |
| 19 | PSU | S2 | 681 | 19 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.88 | 4 (19%) |
| 40 | OMU | L5 | 2837 | 40 | 19,22,23 | 3.37 | 7 (36%) | 25,31,34 | 1.86 | 5 (20%) |
| 40 | PSU | L5 | 4972 | 40 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.92 | 5 (23%) |
| 19 | PSU | S2 | 1244 | 19 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.89 | 4 (19%) |
| 19 | PSU | S2 | 1232 | 19 | 18,21,22 | 1.11 | 1 (5%) | 21,30,33 | 1.94 | 5 (23%) |
| 40 | PSU | L5 | 4403 | 40 | 18,21,22 | 1.12 | 1 (5%) | 21,30,33 | 1.84 | 5 (23%) |
| 40 | A2M | L5 | 2787 | 40 | 18,25,26 | 1.29 | 2 (11%) | 20,36,39 | 1.73 | 6 (30%) |
| 19 | PSU | S2 | 109 | 19 | 18,21,22 | 1.12 | 1 (5%) | 21,30,33 | 1.85 | 4 (19%) |
| 40 | UR3 | L5 | 4530 | 40 | 19,22,23 | 2.80 | 7 (36%) | 26,32,35 | 1.58 | 4 (15%) |
| 40 | OMC | L5 | 2824 | 40 | 19,22,23 | 0.54 | 0 | 25,31,34 | 0.73 | 1 (4%) |
| 40 | OMG | L5 | 2424 | 40 | 19,26,27 | 1.16 | 2 (10%) | 21,38,41 | 0.86 | 1 (4%) |
| 40 | PSU | L5 | 1582 | 40 | 18,21,22 | 1.13 | 1 (5%) | 21,30,33 | 1.90 | 5 (23%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\|>2$ | Counts | RMSZ | $\#\|Z\|>2$ |
| 19 | OMU | S2 | 354 | 19 | 19,22,23 | 3.36 | 7 (36%) | 25,31,34 | 1.80 | 5 (20%) |
| 40 | A2M | L5 | 3867 | 40 | 18,25,26 | 1.30 | 2 (11%) | 20,36,39 | 1.90 | 6 (30%) |
| 40 | PSU | L5 | 1782 | 40 | 18,21,22 | 1.12 | 1 (5%) | 21,30,33 | 1.95 | 5 (23%) |
| 40 | OMC | L5 | 3841 | 40 | 19,22,23 | 0.51 | 0 | 25,31,34 | 0.58 | 0 |
| 40 | PSU | L5 | 3884 | 40 | 18,21,22 | 1.09 | 1 (5%) | 21,30,33 | 1.90 | 4 (19%) |
| 40 | PSU | L5 | 1683 | 40 | 18,21,22 | 1.12 | 1 (5%) | 21,30,33 | 1.90 | 4 (19%) |
| 19 | PSU | S2 | 1056 | 19 | 18,21,22 | 1.06 | 1 (5%) | 21,30,33 | 1.86 | 4 (19%) |
| 19 | A2M | S2 | 468 | 19 | 18,25,26 | 1.30 | 2 (11%) | 20,36,39 | 1.99 | 6 (30%) |
| 40 | OMC | L5 | 2351 | 40,86 | 19,22,23 | 0.52 | 0 | 25,31,34 | 0.72 | 1 (4%) |
| 40 | OMG | L5 | 4494 | 40 | 19,26,27 | 1.16 | 2 (10%) | 21,38,41 | 0.85 | 1 (4%) |
| 40 | OMC | L5 | 3701 | 40 | 19,22,23 | 0.54 | 0 | 25,31,34 | 0.81 | 1 (4%) |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 40 | PSU | L5 | 1862 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 686 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | MA6 | S2 | 1850 | 19 | - | 1/7/29/30 | 0/3/3/3 |
| 40 | PSU | L5 | 4500 | 40 | - | 3/7/25/26 | 0/2/2/2 |
| 19 | A2M | S2 | 576 | 19 | - | 4/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 3822 | 40 | - | 4/7/25/26 | 0/2/2/2 |
| 40 | 6MZ | L5 | 4220 | 40 | - | 2/5/27/28 | 0/3/3/3 |
| 40 | OMG | L5 | 3744 | 40 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | OMU | L5 | 4498 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 40 | 1MA | L5 | 1322 | 40 | - | 0/3/25/26 | 0/3/3/3 |
| 19 | PSU | S2 | 1046 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMU | L5 | 4306 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 40 | OMG | L5 | 4196 | 38,40 | - | 0/5/27/28 | 0/3/3/3 |
| 19 | PSU | S2 | 93 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMG | L5 | 2364 | 40,86 | - | 2/5/27/28 | 0/3/3/3 |
| 19 | OMC | S2 | 1391 | 19 | - | 0/9/27/28 | 0/2/2/2 |
| 19 | OMG | S2 | 601 | 19 | - | 1/5/27/28 | 0/3/3/3 |
| 19 | PSU | S2 | 1367 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMC | L5 | 2861 | 40 | - | 3/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 4579 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | A2M | S2 | 27 | 19 | - | 1/5/27/28 | 0/3/3/3 |

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*Continued from previous page...*

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 40 | PSU | L5 | 4296 | 40 | - | 2/7/25/26 | 0/2/2/2 |
| 19 | OMC | S2 | 1272 | 19 | - | 2/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 3851 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMU | S2 | 1442 | 19 | - | 3/9/27/28 | 0/2/2/2 |
| 19 | PSU | S2 | 966 | 86,19 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 3844 | 40 | - | 1/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 866 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMC | S2 | 174 | 19 | - | 0/9/27/28 | 0/2/2/2 |
| 40 | A2M | L5 | 400 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | OMG | L5 | 1625 | 40 | - | 3/5/27/28 | 0/3/3/3 |
| 40 | A2M | L5 | 3825 | 40 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 4673 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 801 | 19 | - | 3/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 1781 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 649 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 1081 | 19 | - | 1/7/25/26 | 0/2/2/2 |
| 19 | A2M | S2 | 159 | 19 | - | 1/5/27/28 | 0/3/3/3 |
| 19 | OMU | S2 | 428 | 19 | - | 3/9/27/28 | 0/2/2/2 |
| 19 | OMU | S2 | 1288 | 19 | - | 3/9/27/28 | 0/2/2/2 |
| 40 | OMC | L5 | 1340 | 40 | - | 1/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 1536 | 40 | - | 2/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4576 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | A2M | L5 | 1524 | 40 | - | 3/5/27/28 | 0/3/3/3 |
| 19 | 4AC | S2 | 1337 | 19 | - | 1/11/29/30 | 0/2/2/2 |
| 40 | PSU | L5 | 3920 | 40,86 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4457 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMG | S2 | 1328 | 19 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | OMG | L5 | 4392 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | A2M | L5 | 4571 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | A2M | L5 | 4590 | 40 | - | 4/5/27/28 | 0/3/3/3 |
| 40 | OMG | L5 | 4637 | 40 | - | 3/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 4628 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | A2M | S2 | 484 | 19 | - | 1/5/27/28 | 0/3/3/3 |
| 19 | OMU | S2 | 172 | 19 | - | 2/9/27/28 | 0/2/2/2 |
| 40 | A2M | L5 | 1323 | 40 | - | 3/5/27/28 | 0/3/3/3 |
| 40 | 5MC | L5 | 3782 | 40,86 | - | 1/7/25/26 | 0/2/2/2 |
| 19 | OMG | S2 | 644 | 19 | - | 4/5/27/28 | 0/3/3/3 |
| 40 | OMC | L5 | 3869 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 19 | OMU | S2 | 1326 | 19 | - | 0/9/27/28 | 0/2/2/2 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 40 | A2M | L5 | 1534 | 40,86 | - | 1/5/27/28 | 0/3/3/3 |
| 19 | MA6 | S2 | 1851 | 19 | - | 2/7/29/30 | 0/3/3/3 |
| 40 | PSU | L5 | 4471 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4552 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMG | S2 | 436 | 19 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | OMU | L5 | 4620 | 40 | - | 1/9/27/28 | 0/2/2/2 |
| 19 | A2M | S2 | 99 | 86,19 | - | 2/5/27/28 | 0/3/3/3 |
| 40 | A2M | L5 | 3830 | 40 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 4442 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 1792 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 3637 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 1860 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4361 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 3853 | 40,86 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMC | L5 | 2365 | 40,86 | - | 0/9/27/28 | 0/2/2/2 |
| 19 | A2M | S2 | 668 | 86,19 | - | 3/5/27/28 | 0/3/3/3 |
| 40 | A2M | L5 | 2401 | 40 | - | 3/5/27/28 | 0/3/3/3 |
| 19 | OMG | S2 | 1490 | 19 | - | 2/5/27/28 | 0/3/3/3 |
| 40 | OMC | L5 | 3887 | 40 | - | 1/9/27/28 | 0/2/2/2 |
| 40 | A2M | L5 | 2363 | 40,86 | - | 0/5/27/28 | 0/3/3/3 |
| 19 | OMU | S2 | 116 | 19 | - | 0/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 1677 | 40 | - | 1/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4521 | 40,86 | - | 1/7/25/26 | 0/2/2/2 |
| 19 | OMC | S2 | 462 | 19 | - | 1/9/27/28 | 0/2/2/2 |
| 19 | PSU | S2 | 105 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 1174 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMG | S2 | 509 | 19 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 2839 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | A2M | L5 | 2815 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 42 | PSU | L8 | 69 | 42 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | A2M | L5 | 3785 | 40,86 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | A2M | L5 | 1871 | 40,86 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | OMG | L5 | 1522 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | OMG | L5 | 4618 | 40 | - | 2/5/27/28 | 0/3/3/3 |
| 40 | OMC | L5 | 2804 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 19 | OMC | S2 | 517 | 19 | - | 1/9/27/28 | 0/2/2/2 |
| 40 | OMG | L5 | 4499 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | UY1 | L5 | 3818 | 40 | - | 1/9/27/28 | 0/2/2/2 |
| 40 | OMG | L5 | 4228 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 4293 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | G7M | S2 | 1639 | 19 | - | 2/3/25/26 | 0/3/3/3 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 19 | OMU | S2 | 799 | 19 | - | 2/9/27/28 | 0/2/2/2 |
| 19 | PSU | S2 | 406 | 19 | - | 1/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4312 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4636 | 40 | - | 2/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 5010 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMC | S2 | 1703 | 19 | - | 1/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 3639 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 42 | OMG | L8 | 75 | 42 | - | 1/5/27/28 | 0/3/3/3 |
| 19 | A2M | S2 | 1031 | 19 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | A2M | L5 | 1326 | 40 | - | 3/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 5001 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMU | S2 | 121 | 19 | - | 0/9/27/28 | 0/2/2/2 |
| 40 | A2M | L5 | 4523 | 40,86 | - | 2/5/27/28 | 0/3/3/3 |
| 40 | OMC | L5 | 4456 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 19 | PSU | S2 | 814 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4689 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 651 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4532 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMU | S2 | 627 | 19 | - | 2/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 4299 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | A2M | L5 | 398 | 40 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | OMU | L5 | 4227 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 42 | PSU | L8 | 55 | 42 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMU | L5 | 3925 | 40 | - | 1/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 4431 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 1004 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMG | S2 | 867 | 19 | - | 3/5/27/28 | 0/3/3/3 |
| 40 | OMG | L5 | 1316 | 40 | - | 1/5/27/28 | 0/3/3/3 |
| 19 | OMG | S2 | 683 | 19 | - | 2/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 2632 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMC | L5 | 3808 | 40,86 | - | 0/9/27/28 | 0/2/2/2 |
| 40 | A2M | L5 | 3718 | 40 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | 5MC | L5 | 4447 | 40 | - | 4/7/25/26 | 0/2/2/2 |
| 40 | OMG | L5 | 4623 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 19 | A2M | S2 | 1383 | 19 | - | 3/5/27/28 | 0/3/3/3 |
| 19 | 4AC | S2 | 1842 | 19 | - | 0/11/29/30 | 0/2/2/2 |
| 40 | OMG | L5 | 3792 | 40 | - | 3/5/27/28 | 0/3/3/3 |
| 19 | A2M | S2 | 166 | 19 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | OMC | L5 | 4536 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 19 | PSU | S2 | 1177 | 19 | - | 0/7/25/26 | 0/2/2/2 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 19 | PSU | S2 | 1045 | 19 | - | 2/7/25/26 | 0/2/2/2 |
| 40 | OMG | L5 | 3899 | 40 | - | 3/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 3695 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMG | L5 | 3627 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 4353 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 863 | 19 | - | 2/7/25/26 | 0/2/2/2 |
| 40 | OMG | L5 | 4370 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 1744 | 40,86 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMG | L5 | 2876 | 40 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | OMC | L5 | 2422 | 40,86 | - | 3/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 4493 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4973 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | 6MZ | S2 | 1832 | 86,19 | - | 2/5/27/28 | 0/3/3/3 |
| 19 | B8N | S2 | 1248 | 19 | - | 7/16/34/35 | 0/2/2/2 |
| 19 | PSU | S2 | 681 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMU | L5 | 2837 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 4972 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 1244 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 1232 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 4403 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | A2M | L5 | 2787 | 40 | - | 3/5/27/28 | 0/3/3/3 |
| 19 | PSU | S2 | 109 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | UR3 | L5 | 4530 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMC | L5 | 2824 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 40 | OMG | L5 | 2424 | 40 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 1582 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | OMU | S2 | 354 | 19 | - | 1/9/27/28 | 0/2/2/2 |
| 40 | A2M | L5 | 3867 | 40 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | PSU | L5 | 1782 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | OMC | L5 | 3841 | 40 | - | 0/9/27/28 | 0/2/2/2 |
| 40 | PSU | L5 | 3884 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 40 | PSU | L5 | 1683 | 40 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | PSU | S2 | 1056 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | A2M | S2 | 468 | 19 | - | 1/5/27/28 | 0/3/3/3 |
| 40 | OMC | L5 | 2351 | 40,86 | - | 1/9/27/28 | 0/2/2/2 |
| 40 | OMG | L5 | 4494 | 40 | - | 0/5/27/28 | 0/3/3/3 |
| 40 | OMC | L5 | 3701 | 40 | - | 4/9/27/28 | 0/2/2/2 |

All (345) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 3818 | UY1 | C6-C5 | 12.93 | 1.49 | 1.35 |
| 40 | L5 | 3818 | UY1 | C2-N1 | 11.92 | 1.52 | 1.36 |
| 19 | S2 | 1288 | OMU | C2-N1 | 8.80 | 1.52 | 1.38 |
| 19 | S2 | 799 | OMU | C2-N1 | 8.62 | 1.52 | 1.38 |
| 19 | S2 | 1442 | OMU | C2-N1 | 8.59 | 1.51 | 1.38 |
| 19 | S2 | 1832 | 6MZ | C3'-C2' | -8.37 | 1.30 | 1.53 |
| 40 | L5 | 3925 | OMU | C2-N1 | 8.30 | 1.51 | 1.38 |
| 19 | S2 | 172 | OMU | C2-N1 | 8.29 | 1.51 | 1.38 |
| 40 | L5 | 2837 | OMU | C2-N1 | 8.25 | 1.51 | 1.38 |
| 40 | L5 | 4306 | OMU | C2-N1 | 8.24 | 1.51 | 1.38 |
| 40 | L5 | 4227 | OMU | C2-N1 | 8.24 | 1.51 | 1.38 |
| 19 | S2 | 354 | OMU | C2-N1 | 8.23 | 1.51 | 1.38 |
| 19 | S2 | 121 | OMU | C2-N1 | 8.22 | 1.51 | 1.38 |
| 40 | L5 | 4620 | OMU | C2-N1 | 8.21 | 1.51 | 1.38 |
| 19 | S2 | 627 | OMU | C2-N1 | 8.18 | 1.51 | 1.38 |
| 40 | L5 | 4498 | OMU | C2-N1 | 8.16 | 1.51 | 1.38 |
| 19 | S2 | 116 | OMU | C2-N1 | 8.15 | 1.51 | 1.38 |
| 19 | S2 | 428 | OMU | C2-N1 | 8.12 | 1.51 | 1.38 |
| 19 | S2 | 1326 | OMU | C2-N1 | 8.11 | 1.51 | 1.38 |
| 19 | S2 | 1248 | B8N | C6-N1 | 7.95 | 1.55 | 1.36 |
| 40 | L5 | 3818 | UY1 | C2-N3 | 7.90 | 1.50 | 1.37 |
| 19 | S2 | 1850 | MA6 | C3'-C2' | -7.82 | 1.32 | 1.53 |
| 19 | S2 | 1248 | B8N | C4-N3 | -7.77 | 1.26 | 1.40 |
| 19 | S2 | 1832 | 6MZ | O4'-C1' | -7.41 | 1.31 | 1.40 |
| 19 | S2 | 1248 | B8N | C4-C5 | 7.10 | 1.63 | 1.47 |
| 19 | S2 | 1288 | OMU | C2-N3 | 7.02 | 1.50 | 1.38 |
| 19 | S2 | 116 | OMU | C2-N3 | 6.97 | 1.50 | 1.38 |
| 19 | S2 | 799 | OMU | C2-N3 | 6.96 | 1.50 | 1.38 |
| 19 | S2 | 1442 | OMU | C2-N3 | 6.95 | 1.50 | 1.38 |
| 40 | L5 | 4498 | OMU | C2-N3 | 6.94 | 1.50 | 1.38 |
| 19 | S2 | 121 | OMU | C2-N3 | 6.94 | 1.50 | 1.38 |
| 40 | L5 | 4227 | OMU | C2-N3 | 6.93 | 1.50 | 1.38 |
| 40 | L5 | 4306 | OMU | C2-N3 | 6.92 | 1.50 | 1.38 |
| 19 | S2 | 354 | OMU | C2-N3 | 6.92 | 1.50 | 1.38 |
| 19 | S2 | 627 | OMU | C2-N3 | 6.91 | 1.50 | 1.38 |
| 19 | S2 | 428 | OMU | C2-N3 | 6.89 | 1.50 | 1.38 |
| 19 | S2 | 172 | OMU | C2-N3 | 6.87 | 1.49 | 1.38 |
| 40 | L5 | 3925 | OMU | C2-N3 | 6.86 | 1.49 | 1.38 |
| 19 | S2 | 1326 | OMU | C2-N3 | 6.86 | 1.49 | 1.38 |
| 40 | L5 | 4620 | OMU | C2-N3 | 6.85 | 1.49 | 1.38 |
| 40 | L5 | 2837 | OMU | C2-N3 | 6.84 | 1.49 | 1.38 |
| 40 | L5 | 4530 | UR3 | C2-N1 | 6.79 | 1.47 | 1.38 |
| 40 | L5 | 4530 | UR3 | C6-C5 | 6.31 | 1.49 | 1.35 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 19 | S2 | 1288 | OMU | C6-C5 | 5.96 | 1.48 | 1.35 |
| 19 | S2 | 627 | OMU | C6-C5 | 5.91 | 1.48 | 1.35 |
| 40 | L5 | 4227 | OMU | C6-C5 | 5.90 | 1.48 | 1.35 |
| 40 | L5 | 4498 | OMU | C6-C5 | 5.90 | 1.48 | 1.35 |
| 40 | L5 | 4530 | UR3 | C2-N3 | 5.90 | 1.50 | 1.39 |
| 19 | S2 | 799 | OMU | C6-C5 | 5.90 | 1.48 | 1.35 |
| 19 | S2 | 121 | OMU | C6-C5 | 5.90 | 1.48 | 1.35 |
| 19 | S2 | 428 | OMU | C6-C5 | 5.90 | 1.48 | 1.35 |
| 19 | S2 | 1248 | B8N | C2-N1 | 5.90 | 1.56 | 1.39 |
| 19 | S2 | 354 | OMU | C6-C5 | 5.87 | 1.48 | 1.35 |
| 19 | S2 | 1442 | OMU | C6-C5 | 5.85 | 1.48 | 1.35 |
| 19 | S2 | 1326 | OMU | C6-C5 | 5.85 | 1.48 | 1.35 |
| 19 | S2 | 172 | OMU | C6-C5 | 5.85 | 1.48 | 1.35 |
| 40 | L5 | 4306 | OMU | C6-C5 | 5.84 | 1.48 | 1.35 |
| 40 | L5 | 2837 | OMU | C6-C5 | 5.82 | 1.48 | 1.35 |
| 19 | S2 | 116 | OMU | C6-C5 | 5.82 | 1.48 | 1.35 |
| 40 | L5 | 3925 | OMU | C6-C5 | 5.81 | 1.48 | 1.35 |
| 40 | L5 | 4620 | OMU | C6-C5 | 5.77 | 1.48 | 1.35 |
| 19 | S2 | 1850 | MA6 | O4'-C1' | -5.61 | 1.33 | 1.40 |
| 19 | S2 | 1639 | G7M | C2-N3 | 5.55 | 1.46 | 1.33 |
| 40 | L5 | 2837 | OMU | O4-C4 | -5.54 | 1.13 | 1.24 |
| 40 | L5 | 3818 | UY1 | C6-N1 | 5.49 | 1.45 | 1.36 |
| 40 | L5 | 3925 | OMU | O4-C4 | -5.48 | 1.13 | 1.24 |
| 19 | S2 | 1326 | OMU | O4-C4 | -5.47 | 1.13 | 1.24 |
| 40 | L5 | 4227 | OMU | O4-C4 | -5.47 | 1.13 | 1.24 |
| 19 | S2 | 627 | OMU | O4-C4 | -5.44 | 1.13 | 1.24 |
| 19 | S2 | 172 | OMU | O4-C4 | -5.42 | 1.13 | 1.24 |
| 40 | L5 | 4620 | OMU | O4-C4 | -5.42 | 1.13 | 1.24 |
| 19 | S2 | 116 | OMU | O4-C4 | -5.41 | 1.14 | 1.24 |
| 19 | S2 | 354 | OMU | O4-C4 | -5.41 | 1.14 | 1.24 |
| 40 | L5 | 4306 | OMU | O4-C4 | -5.41 | 1.14 | 1.24 |
| 19 | S2 | 1248 | B8N | C6-C5 | 5.41 | 1.42 | 1.35 |
| 19 | S2 | 428 | OMU | O4-C4 | -5.40 | 1.14 | 1.24 |
| 19 | S2 | 799 | OMU | O4-C4 | -5.40 | 1.14 | 1.24 |
| 19 | S2 | 1288 | OMU | O4-C4 | -5.39 | 1.14 | 1.24 |
| 40 | L5 | 4498 | OMU | O4-C4 | -5.38 | 1.14 | 1.24 |
| 19 | S2 | 1442 | OMU | O4-C4 | -5.38 | 1.14 | 1.24 |
| 19 | S2 | 121 | OMU | O4-C4 | -5.36 | 1.14 | 1.24 |
| 19 | S2 | 1639 | G7M | C4-N3 | 5.19 | 1.49 | 1.37 |
| 19 | S2 | 1639 | G7M | C2-N2 | 5.00 | 1.45 | 1.34 |
| 19 | S2 | 1832 | 6MZ | O4'-C4' | 4.74 | 1.55 | 1.45 |
| 40 | L5 | 3818 | UY1 | C4-N3 | 4.54 | 1.47 | 1.38 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 19 | S2 | 627 | OMU | C4-N3 | 4.46 | 1.46 | 1.38 |
| 40 | L5 | 4498 | OMU | C4-N3 | 4.42 | 1.46 | 1.38 |
| 19 | S2 | 428 | OMU | C4-N3 | 4.42 | 1.46 | 1.38 |
| 19 | S2 | 1832 | 6MZ | C5'-C4' | -4.39 | 1.38 | 1.51 |
| 40 | L5 | 4306 | OMU | C4-N3 | 4.39 | 1.46 | 1.38 |
| 19 | S2 | 172 | OMU | C4-N3 | 4.39 | 1.46 | 1.38 |
| 19 | S2 | 354 | OMU | C4-N3 | 4.39 | 1.46 | 1.38 |
| 19 | S2 | 116 | OMU | C4-N3 | 4.38 | 1.46 | 1.38 |
| 19 | S2 | 1288 | OMU | C4-N3 | 4.37 | 1.46 | 1.38 |
| 19 | S2 | 1326 | OMU | C4-N3 | 4.37 | 1.46 | 1.38 |
| 19 | S2 | 1442 | OMU | C4-N3 | 4.35 | 1.46 | 1.38 |
| 40 | L5 | 2837 | OMU | C4-N3 | 4.34 | 1.46 | 1.38 |
| 19 | S2 | 121 | OMU | C4-N3 | 4.33 | 1.46 | 1.38 |
| 40 | L5 | 3925 | OMU | C4-N3 | 4.31 | 1.46 | 1.38 |
| 40 | L5 | 4227 | OMU | C4-N3 | 4.30 | 1.46 | 1.38 |
| 40 | L5 | 4620 | OMU | C4-N3 | 4.29 | 1.46 | 1.38 |
| 19 | S2 | 799 | OMU | C4-N3 | 4.27 | 1.45 | 1.38 |
| 40 | L5 | 4220 | 6MZ | C6-C5 | -4.23 | 1.38 | 1.44 |
| 19 | S2 | 1850 | MA6 | O4'-C4' | 4.20 | 1.54 | 1.45 |
| 19 | S2 | 1850 | MA6 | C5'-C4' | -4.12 | 1.39 | 1.51 |
| 19 | S2 | 1832 | 6MZ | C6-C5 | -4.05 | 1.38 | 1.44 |
| 19 | S2 | 1850 | MA6 | C6-C5 | -3.85 | 1.39 | 1.44 |
| 19 | S2 | 686 | PSU | C6-C5 | 3.82 | 1.39 | 1.35 |
| 19 | S2 | 1639 | G7M | C6-N1 | 3.81 | 1.43 | 1.37 |
| 19 | S2 | 801 | PSU | C6-C5 | 3.78 | 1.39 | 1.35 |
| 19 | S2 | 1248 | B8N | C1'-C5 | 3.78 | 1.58 | 1.50 |
| 19 | S2 | 1046 | PSU | C6-C5 | 3.76 | 1.39 | 1.35 |
| 19 | S2 | 966 | PSU | C6-C5 | 3.76 | 1.39 | 1.35 |
| 40 | L5 | 4361 | PSU | C6-C5 | 3.74 | 1.39 | 1.35 |
| 19 | S2 | 1174 | PSU | C6-C5 | 3.73 | 1.39 | 1.35 |
| 19 | S2 | 1177 | PSU | C6-C5 | 3.73 | 1.39 | 1.35 |
| 19 | S2 | 1367 | PSU | C6-C5 | 3.72 | 1.39 | 1.35 |
| 19 | S2 | 406 | PSU | C6-C5 | 3.72 | 1.39 | 1.35 |
| 40 | L5 | 1860 | PSU | C6-C5 | 3.71 | 1.39 | 1.35 |
| 40 | L5 | 4293 | PSU | C6-C5 | 3.71 | 1.39 | 1.35 |
| 40 | L5 | 4312 | PSU | C6-C5 | 3.71 | 1.39 | 1.35 |
| 19 | S2 | 109 | PSU | C6-C5 | 3.71 | 1.39 | 1.35 |
| 40 | L5 | 1683 | PSU | C6-C5 | 3.71 | 1.39 | 1.35 |
| 40 | L5 | 4636 | PSU | C6-C5 | 3.71 | 1.39 | 1.35 |
| 40 | L5 | 1582 | PSU | C6-C5 | 3.70 | 1.39 | 1.35 |
| 19 | S2 | 1244 | PSU | C6-C5 | 3.70 | 1.39 | 1.35 |
| 40 | L5 | 4500 | PSU | C6-C5 | 3.70 | 1.39 | 1.35 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 4521 | PSU | C6-C5 | 3.69 | 1.39 | 1.35 |
| 40 | L5 | 3851 | PSU | C6-C5 | 3.69 | 1.39 | 1.35 |
| 19 | S2 | 651 | PSU | C6-C5 | 3.68 | 1.39 | 1.35 |
| 40 | L5 | 1781 | PSU | C6-C5 | 3.68 | 1.39 | 1.35 |
| 40 | L5 | 2839 | PSU | C6-C5 | 3.68 | 1.39 | 1.35 |
| 19 | S2 | 814 | PSU | C6-C5 | 3.68 | 1.39 | 1.35 |
| 19 | S2 | 1045 | PSU | C6-C5 | 3.67 | 1.39 | 1.35 |
| 42 | L8 | 55 | PSU | C6-C5 | 3.67 | 1.39 | 1.35 |
| 40 | L5 | 5001 | PSU | C6-C5 | 3.66 | 1.39 | 1.35 |
| 19 | S2 | 93 | PSU | C6-C5 | 3.66 | 1.39 | 1.35 |
| 40 | L5 | 1792 | PSU | C6-C5 | 3.65 | 1.39 | 1.35 |
| 40 | L5 | 4403 | PSU | C6-C5 | 3.65 | 1.39 | 1.35 |
| 19 | S2 | 863 | PSU | C6-C5 | 3.64 | 1.39 | 1.35 |
| 40 | L5 | 4299 | PSU | C6-C5 | 3.64 | 1.39 | 1.35 |
| 19 | S2 | 1232 | PSU | C6-C5 | 3.63 | 1.39 | 1.35 |
| 40 | L5 | 4973 | PSU | C6-C5 | 3.62 | 1.39 | 1.35 |
| 19 | S2 | 649 | PSU | C6-C5 | 3.62 | 1.39 | 1.35 |
| 19 | S2 | 1851 | MA6 | C6-C5 | -3.62 | 1.39 | 1.44 |
| 40 | L5 | 5010 | PSU | C6-C5 | 3.62 | 1.39 | 1.35 |
| 40 | L5 | 3639 | PSU | C6-C5 | 3.61 | 1.39 | 1.35 |
| 40 | L5 | 4471 | PSU | C6-C5 | 3.61 | 1.39 | 1.35 |
| 40 | L5 | 3844 | PSU | C6-C5 | 3.61 | 1.39 | 1.35 |
| 40 | L5 | 1782 | PSU | C6-C5 | 3.60 | 1.39 | 1.35 |
| 40 | L5 | 4532 | PSU | C6-C5 | 3.60 | 1.39 | 1.35 |
| 40 | L5 | 4296 | PSU | C6-C5 | 3.59 | 1.39 | 1.35 |
| 40 | L5 | 4552 | PSU | C6-C5 | 3.59 | 1.39 | 1.35 |
| 40 | L5 | 1862 | PSU | C6-C5 | 3.57 | 1.39 | 1.35 |
| 40 | L5 | 4431 | PSU | C6-C5 | 3.57 | 1.39 | 1.35 |
| 40 | L5 | 3637 | PSU | C6-C5 | 3.57 | 1.39 | 1.35 |
| 19 | S2 | 1004 | PSU | C6-C5 | 3.57 | 1.39 | 1.35 |
| 40 | L5 | 4353 | PSU | C6-C5 | 3.56 | 1.39 | 1.35 |
| 40 | L5 | 1744 | PSU | C6-C5 | 3.56 | 1.39 | 1.35 |
| 40 | L5 | 4576 | PSU | C6-C5 | 3.55 | 1.39 | 1.35 |
| 40 | L5 | 3853 | PSU | C6-C5 | 3.55 | 1.39 | 1.35 |
| 19 | S2 | 105 | PSU | C6-C5 | 3.55 | 1.39 | 1.35 |
| 40 | L5 | 4493 | PSU | C6-C5 | 3.54 | 1.39 | 1.35 |
| 19 | S2 | 1081 | PSU | C6-C5 | 3.54 | 1.39 | 1.35 |
| 42 | L8 | 69 | PSU | C6-C5 | 3.54 | 1.39 | 1.35 |
| 40 | L5 | 3695 | PSU | C6-C5 | 3.54 | 1.39 | 1.35 |
| 40 | L5 | 3818 | UY1 | O4-C4 | -3.53 | 1.16 | 1.23 |
| 19 | S2 | 866 | PSU | C6-C5 | 3.53 | 1.39 | 1.35 |
| 40 | L5 | 4972 | PSU | C6-C5 | 3.53 | 1.39 | 1.35 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 3884 | PSU | C6-C5 | 3.53 | 1.39 | 1.35 |
| 19 | S2 | 681 | PSU | C6-C5 | 3.51 | 1.39 | 1.35 |
| 40 | L5 | 4673 | PSU | C6-C5 | 3.50 | 1.39 | 1.35 |
| 19 | S2 | 1850 | MA6 | C6-N6 | 3.50 | 1.45 | 1.37 |
| 40 | L5 | 3920 | PSU | C6-C5 | 3.49 | 1.39 | 1.35 |
| 19 | S2 | 1851 | MA6 | C6-N6 | 3.49 | 1.45 | 1.37 |
| 40 | L5 | 4442 | PSU | C6-C5 | 3.49 | 1.39 | 1.35 |
| 40 | L5 | 4457 | PSU | C6-C5 | 3.48 | 1.39 | 1.35 |
| 19 | S2 | 668 | A2M | O5'-C5' | -3.46 | 1.34 | 1.44 |
| 19 | S2 | 576 | A2M | O5'-C5' | -3.44 | 1.34 | 1.44 |
| 40 | L5 | 4689 | PSU | C6-C5 | 3.43 | 1.39 | 1.35 |
| 40 | L5 | 2632 | PSU | C6-C5 | 3.42 | 1.39 | 1.35 |
| 19 | S2 | 1056 | PSU | C6-C5 | 3.41 | 1.39 | 1.35 |
| 19 | S2 | 1639 | G7M | C5-C6 | 3.40 | 1.54 | 1.45 |
| 40 | L5 | 4579 | PSU | C6-C5 | 3.40 | 1.39 | 1.35 |
| 19 | S2 | 1383 | A2M | O5'-C5' | -3.39 | 1.34 | 1.44 |
| 40 | L5 | 1323 | A2M | O5'-C5' | -3.39 | 1.34 | 1.44 |
| 40 | L5 | 3822 | PSU | C6-C5 | 3.39 | 1.39 | 1.35 |
| 40 | L5 | 400 | A2M | O5'-C5' | -3.38 | 1.34 | 1.44 |
| 19 | S2 | 99 | A2M | O5'-C5' | -3.38 | 1.34 | 1.44 |
| 40 | L5 | 1677 | PSU | C6-C5 | 3.35 | 1.39 | 1.35 |
| 40 | L5 | 1536 | PSU | C6-C5 | 3.35 | 1.39 | 1.35 |
| 40 | L5 | 4628 | PSU | C6-C5 | 3.35 | 1.39 | 1.35 |
| 40 | L5 | 4523 | A2M | O5'-C5' | -3.34 | 1.34 | 1.44 |
| 19 | S2 | 27 | A2M | O5'-C5' | -3.33 | 1.34 | 1.44 |
| 40 | L5 | 1534 | A2M | O5'-C5' | -3.33 | 1.34 | 1.44 |
| 19 | S2 | 468 | A2M | O5'-C5' | -3.32 | 1.34 | 1.44 |
| 40 | L5 | 3825 | A2M | O5'-C5' | -3.32 | 1.34 | 1.44 |
| 19 | S2 | 1031 | A2M | O5'-C5' | -3.31 | 1.34 | 1.44 |
| 40 | L5 | 3830 | A2M | O5'-C5' | -3.31 | 1.34 | 1.44 |
| 40 | L5 | 4571 | A2M | O5'-C5' | -3.30 | 1.34 | 1.44 |
| 40 | L5 | 2787 | A2M | O5'-C5' | -3.29 | 1.34 | 1.44 |
| 19 | S2 | 166 | A2M | O5'-C5' | -3.29 | 1.34 | 1.44 |
| 40 | L5 | 3718 | A2M | O5'-C5' | -3.29 | 1.34 | 1.44 |
| 40 | L5 | 2815 | A2M | O5'-C5' | -3.28 | 1.34 | 1.44 |
| 40 | L5 | 3867 | A2M | O5'-C5' | -3.28 | 1.34 | 1.44 |
| 40 | L5 | 1871 | A2M | O5'-C5' | -3.28 | 1.34 | 1.44 |
| 40 | L5 | 2363 | A2M | O5'-C5' | -3.27 | 1.34 | 1.44 |
| 40 | L5 | 398 | A2M | O5'-C5' | -3.27 | 1.34 | 1.44 |
| 40 | L5 | 3785 | A2M | O5'-C5' | -3.25 | 1.34 | 1.44 |
| 40 | L5 | 3818 | UY1 | O2-C2 | -3.24 | 1.16 | 1.23 |
| 19 | S2 | 484 | A2M | O5'-C5' | -3.24 | 1.34 | 1.44 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 2401 | A2M | O5'-C5' | -3.23 | 1.34 | 1.44 |
| 40 | L5 | 3818 | UY1 | C1'-C5 | 3.23 | 1.57 | 1.50 |
| 40 | L5 | 1524 | A2M | O5'-C5' | -3.20 | 1.34 | 1.44 |
| 19 | S2 | 601 | OMG | C8-N7 | -3.15 | 1.29 | 1.34 |
| 40 | L5 | 4590 | A2M | O5'-C5' | -3.14 | 1.35 | 1.44 |
| 40 | L5 | 1326 | A2M | O5'-C5' | -3.14 | 1.35 | 1.44 |
| 19 | S2 | 159 | A2M | O5'-C5' | -3.08 | 1.35 | 1.44 |
| 40 | L5 | 1625 | OMG | C8-N7 | -3.01 | 1.30 | 1.34 |
| 40 | L5 | 2876 | OMG | C8-N7 | -3.00 | 1.30 | 1.34 |
| 19 | S2 | 867 | OMG | C8-N7 | -3.00 | 1.30 | 1.34 |
| 19 | S2 | 683 | OMG | C8-N7 | -2.98 | 1.30 | 1.34 |
| 40 | L5 | 4618 | OMG | C8-N7 | -2.98 | 1.30 | 1.34 |
| 40 | L5 | 2424 | OMG | C8-N7 | -2.97 | 1.30 | 1.34 |
| 19 | S2 | 1490 | OMG | C8-N7 | -2.96 | 1.30 | 1.34 |
| 19 | S2 | 509 | OMG | C8-N7 | -2.96 | 1.30 | 1.34 |
| 40 | L5 | 3899 | OMG | C8-N7 | -2.94 | 1.30 | 1.34 |
| 40 | L5 | 3792 | OMG | C8-N7 | -2.94 | 1.30 | 1.34 |
| 40 | L5 | 4494 | OMG | C8-N7 | -2.94 | 1.30 | 1.34 |
| 19 | S2 | 428 | OMU | C5-C4 | 2.93 | 1.50 | 1.43 |
| 40 | L5 | 1316 | OMG | C8-N7 | -2.93 | 1.30 | 1.34 |
| 19 | S2 | 1850 | MA6 | O3'-C3' | 2.92 | 1.50 | 1.43 |
| 19 | S2 | 436 | OMG | C8-N7 | -2.92 | 1.30 | 1.34 |
| 40 | L5 | 2364 | OMG | C8-N7 | -2.92 | 1.30 | 1.34 |
| 19 | S2 | 644 | OMG | C8-N7 | -2.91 | 1.30 | 1.34 |
| 40 | L5 | 4196 | OMG | C8-N7 | -2.91 | 1.30 | 1.34 |
| 40 | L5 | 4623 | OMG | C8-N7 | -2.90 | 1.30 | 1.34 |
| 19 | S2 | 172 | OMU | C5-C4 | 2.90 | 1.50 | 1.43 |
| 40 | L5 | 4637 | OMG | C8-N7 | -2.90 | 1.30 | 1.34 |
| 19 | S2 | 799 | OMU | C5-C4 | 2.89 | 1.50 | 1.43 |
| 19 | S2 | 627 | OMU | C5-C4 | 2.89 | 1.50 | 1.43 |
| 40 | L5 | 1522 | OMG | C8-N7 | -2.89 | 1.30 | 1.34 |
| 19 | S2 | 1288 | OMU | C5-C4 | 2.88 | 1.49 | 1.43 |
| 40 | L5 | 4370 | OMG | C8-N7 | -2.87 | 1.30 | 1.34 |
| 40 | L5 | 4227 | OMU | C5-C4 | 2.87 | 1.49 | 1.43 |
| 19 | S2 | 1639 | G7M | C2-N1 | 2.87 | 1.44 | 1.37 |
| 40 | L5 | 3925 | OMU | C5-C4 | 2.87 | 1.49 | 1.43 |
| 40 | L5 | 4499 | OMG | C8-N7 | -2.86 | 1.30 | 1.34 |
| 40 | L5 | 4498 | OMU | C5-C4 | 2.86 | 1.49 | 1.43 |
| 19 | S2 | 1326 | OMU | C5-C4 | 2.86 | 1.49 | 1.43 |
| 40 | L5 | 4392 | OMG | C8-N7 | -2.85 | 1.30 | 1.34 |
| 19 | S2 | 1328 | OMG | C8-N7 | -2.83 | 1.30 | 1.34 |
| 42 | L8 | 75 | OMG | C8-N7 | -2.83 | 1.30 | 1.34 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 19 | S2 | 1442 | OMU | C5-C4 | 2.83 | 1.49 | 1.43 |
| 40 | L5 | 3744 | OMG | C8-N7 | -2.82 | 1.30 | 1.34 |
| 40 | L5 | 3627 | OMG | C8-N7 | -2.82 | 1.30 | 1.34 |
| 19 | S2 | 121 | OMU | C5-C4 | 2.81 | 1.49 | 1.43 |
| 19 | S2 | 1288 | OMU | C6-N1 | 2.79 | 1.44 | 1.38 |
| 19 | S2 | 354 | OMU | C5-C4 | 2.78 | 1.49 | 1.43 |
| 19 | S2 | 116 | OMU | C5-C4 | 2.77 | 1.49 | 1.43 |
| 40 | L5 | 2837 | OMU | C5-C4 | 2.76 | 1.49 | 1.43 |
| 40 | L5 | 2837 | OMU | C6-N1 | 2.75 | 1.44 | 1.38 |
| 19 | S2 | 799 | OMU | C6-N1 | 2.75 | 1.44 | 1.38 |
| 40 | L5 | 4620 | OMU | C5-C4 | 2.75 | 1.49 | 1.43 |
| 40 | L5 | 4306 | OMU | C5-C4 | 2.74 | 1.49 | 1.43 |
| 40 | L5 | 4228 | OMG | C8-N7 | -2.72 | 1.30 | 1.34 |
| 19 | S2 | 1850 | MA6 | C2-N3 | 2.72 | 1.36 | 1.32 |
| 19 | S2 | 1442 | OMU | C6-N1 | 2.71 | 1.44 | 1.38 |
| 40 | L5 | 1871 | A2M | C1'-N9 | -2.68 | 1.43 | 1.49 |
| 40 | L5 | 4498 | OMU | C6-N1 | 2.67 | 1.44 | 1.38 |
| 40 | L5 | 4306 | OMU | C6-N1 | 2.67 | 1.44 | 1.38 |
| 40 | L5 | 4227 | OMU | C6-N1 | 2.66 | 1.44 | 1.38 |
| 19 | S2 | 121 | OMU | C6-N1 | 2.66 | 1.44 | 1.38 |
| 19 | S2 | 627 | OMU | C6-N1 | 2.66 | 1.44 | 1.38 |
| 19 | S2 | 116 | OMU | C6-N1 | 2.66 | 1.44 | 1.38 |
| 19 | S2 | 1832 | 6MZ | O3'-C3' | 2.65 | 1.49 | 1.43 |
| 19 | S2 | 1326 | OMU | C6-N1 | 2.65 | 1.44 | 1.38 |
| 19 | S2 | 1851 | MA6 | C2-N3 | 2.65 | 1.36 | 1.32 |
| 19 | S2 | 428 | OMU | C6-N1 | 2.64 | 1.44 | 1.38 |
| 19 | S2 | 1490 | OMG | C5-C6 | -2.63 | 1.42 | 1.47 |
| 19 | S2 | 354 | OMU | C6-N1 | 2.63 | 1.44 | 1.38 |
| 40 | L5 | 4530 | UR3 | C6-N1 | 2.62 | 1.44 | 1.38 |
| 40 | L5 | 3925 | OMU | C6-N1 | 2.62 | 1.44 | 1.38 |
| 40 | L5 | 4523 | A2M | C1'-N9 | -2.59 | 1.43 | 1.49 |
| 40 | L5 | 1625 | OMG | C5-C6 | -2.59 | 1.42 | 1.47 |
| 19 | S2 | 172 | OMU | C6-N1 | 2.59 | 1.44 | 1.38 |
| 19 | S2 | 436 | OMG | C5-C6 | -2.57 | 1.42 | 1.47 |
| 19 | S2 | 166 | A2M | C1'-N9 | -2.57 | 1.43 | 1.49 |
| 40 | L5 | 2876 | OMG | C5-C6 | -2.57 | 1.42 | 1.47 |
| 40 | L5 | 4620 | OMU | C6-N1 | 2.56 | 1.44 | 1.38 |
| 19 | S2 | 601 | OMG | C5-C6 | -2.54 | 1.42 | 1.47 |
| 40 | L5 | 1316 | OMG | C5-C6 | -2.54 | 1.42 | 1.47 |
| 40 | L5 | 1522 | OMG | C5-C6 | -2.53 | 1.42 | 1.47 |
| 40 | L5 | 4228 | OMG | C5-C6 | -2.53 | 1.42 | 1.47 |
| 40 | L5 | 4494 | OMG | C5-C6 | -2.53 | 1.42 | 1.47 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 19 | S2 | 1328 | OMG | C5-C6 | -2.52 | 1.42 | 1.47 |
| 19 | S2 | 683 | OMG | C5-C6 | -2.52 | 1.42 | 1.47 |
| 40 | L5 | 4637 | OMG | C5-C6 | -2.52 | 1.42 | 1.47 |
| 40 | L5 | 2424 | OMG | C5-C6 | -2.51 | 1.42 | 1.47 |
| 40 | L5 | 3792 | OMG | C5-C6 | -2.51 | 1.42 | 1.47 |
| 19 | S2 | 509 | OMG | C5-C6 | -2.50 | 1.42 | 1.47 |
| 40 | L5 | 4530 | UR3 | O2-C2 | -2.49 | 1.17 | 1.22 |
| 40 | L5 | 4392 | OMG | C5-C6 | -2.48 | 1.42 | 1.47 |
| 40 | L5 | 4196 | OMG | C5-C6 | -2.46 | 1.42 | 1.47 |
| 40 | L5 | 4618 | OMG | C5-C6 | -2.45 | 1.42 | 1.47 |
| 42 | L8 | 75 | OMG | C5-C6 | -2.45 | 1.42 | 1.47 |
| 40 | L5 | 3627 | OMG | C5-C6 | -2.45 | 1.42 | 1.47 |
| 40 | L5 | 2364 | OMG | C5-C6 | -2.45 | 1.42 | 1.47 |
| 40 | L5 | 4623 | OMG | C5-C6 | -2.43 | 1.42 | 1.47 |
| 40 | L5 | 4499 | OMG | C5-C6 | -2.42 | 1.42 | 1.47 |
| 40 | L5 | 3899 | OMG | C5-C6 | -2.42 | 1.42 | 1.47 |
| 40 | L5 | 2787 | A2M | C1'-N9 | -2.41 | 1.44 | 1.49 |
| 19 | S2 | 644 | OMG | C5-C6 | -2.41 | 1.42 | 1.47 |
| 40 | L5 | 4370 | OMG | C5-C6 | -2.41 | 1.42 | 1.47 |
| 40 | L5 | 3785 | A2M | C1'-N9 | -2.40 | 1.44 | 1.49 |
| 40 | L5 | 1322 | 1MA | C8-N7 | -2.39 | 1.31 | 1.34 |
| 19 | S2 | 468 | A2M | C1'-N9 | -2.37 | 1.44 | 1.49 |
| 40 | L5 | 1322 | 1MA | C5-C4 | -2.36 | 1.37 | 1.43 |
| 19 | S2 | 1383 | A2M | C1'-N9 | -2.35 | 1.44 | 1.49 |
| 40 | L5 | 1326 | A2M | C1'-N9 | -2.34 | 1.44 | 1.49 |
| 40 | L5 | 2401 | A2M | C1'-N9 | -2.34 | 1.44 | 1.49 |
| 40 | L5 | 3744 | OMG | C5-C6 | -2.34 | 1.42 | 1.47 |
| 40 | L5 | 4530 | UR3 | C5-C4 | 2.33 | 1.49 | 1.43 |
| 40 | L5 | 3867 | A2M | C1'-N9 | -2.32 | 1.44 | 1.49 |
| 19 | S2 | 1850 | MA6 | C1'-N9 | -2.32 | 1.44 | 1.49 |
| 19 | S2 | 867 | OMG | C5-C6 | -2.31 | 1.42 | 1.47 |
| 19 | S2 | 576 | A2M | C1'-N9 | -2.31 | 1.44 | 1.49 |
| 40 | L5 | 400 | A2M | C1'-N9 | -2.31 | 1.44 | 1.49 |
| 19 | S2 | 99 | A2M | C1'-N9 | -2.29 | 1.44 | 1.49 |
| 40 | L5 | 4220 | 6MZ | C2-N3 | 2.28 | 1.35 | 1.32 |
| 40 | L5 | 4530 | UR3 | C3U-N3 | 2.26 | 1.51 | 1.47 |
| 40 | L5 | 2363 | A2M | C1'-N9 | -2.26 | 1.44 | 1.49 |
| 40 | L5 | 3830 | A2M | C1'-N9 | -2.25 | 1.44 | 1.49 |
| 40 | L5 | 1534 | A2M | C1'-N9 | -2.24 | 1.44 | 1.49 |
| 40 | L5 | 1323 | A2M | C1'-N9 | -2.23 | 1.44 | 1.49 |
| 19 | S2 | 27 | A2M | C1'-N9 | -2.20 | 1.44 | 1.49 |
| 19 | S2 | 1832 | 6MZ | C2-N3 | 2.17 | 1.35 | 1.32 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 1524 | A2M | O4'-C4' | -2.17 | 1.40 | 1.45 |
| 40 | L5 | 4571 | A2M | C1'-N9 | -2.15 | 1.44 | 1.49 |
| 40 | L5 | 3818 | UY1 | C4-C5 | 2.14 | 1.50 | 1.44 |
| 40 | L5 | 4590 | A2M | C1'-N9 | -2.11 | 1.44 | 1.49 |
| 40 | L5 | 398 | A2M | C1'-N9 | -2.10 | 1.44 | 1.49 |
| 40 | L5 | 3825 | A2M | C1'-N9 | -2.09 | 1.44 | 1.49 |
| 40 | L5 | 3718 | A2M | C1'-N9 | -2.09 | 1.44 | 1.49 |
| 19 | S2 | 1031 | A2M | C1'-N9 | -2.03 | 1.44 | 1.49 |

All (654) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 19 | S2 | 1851 | MA6 | N1-C6-N6 | -12.48 | 102.41 | 116.83 |
| 19 | S2 | 1850 | MA6 | N1-C6-N6 | -11.76 | 103.24 | 116.83 |
| 40 | L5 | 3785 | A2M | C4'-O4'-C1' | -8.38 | 102.25 | 109.92 |
| 19 | S2 | 1832 | 6MZ | N3-C2-N1 | -6.38 | 120.02 | 128.67 |
| 19 | S2 | 1851 | MA6 | N3-C2-N1 | -6.30 | 120.13 | 128.67 |
| 40 | L5 | 1524 | A2M | C4'-O4'-C1' | -6.17 | 104.27 | 109.92 |
| 40 | L5 | 4220 | 6MZ | N3-C2-N1 | -6.13 | 120.35 | 128.67 |
| 19 | S2 | 1850 | MA6 | N3-C2-N1 | -6.06 | 120.44 | 128.67 |
| 19 | S2 | 172 | OMU | C4-N3-C2 | -5.77 | 119.45 | 126.61 |
| 40 | L5 | 3925 | OMU | C4-N3-C2 | -5.77 | 119.45 | 126.61 |
| 19 | S2 | 1326 | OMU | C4-N3-C2 | -5.74 | 119.48 | 126.61 |
| 19 | S2 | 627 | OMU | C4-N3-C2 | -5.72 | 119.51 | 126.61 |
| 19 | S2 | 428 | OMU | C4-N3-C2 | -5.69 | 119.55 | 126.61 |
| 40 | L5 | 4227 | OMU | C4-N3-C2 | -5.65 | 119.60 | 126.61 |
| 40 | L5 | 2837 | OMU | C4-N3-C2 | -5.64 | 119.61 | 126.61 |
| 19 | S2 | 799 | OMU | C4-N3-C2 | -5.60 | 119.67 | 126.61 |
| 40 | L5 | 4306 | OMU | C4-N3-C2 | -5.60 | 119.67 | 126.61 |
| 40 | L5 | 4498 | OMU | C4-N3-C2 | -5.58 | 119.69 | 126.61 |
| 19 | S2 | 354 | OMU | C4-N3-C2 | -5.55 | 119.72 | 126.61 |
| 19 | S2 | 1442 | OMU | C4-N3-C2 | -5.49 | 119.79 | 126.61 |
| 40 | L5 | 4523 | A2M | C4'-O4'-C1' | -5.49 | 104.90 | 109.92 |
| 40 | L5 | 4530 | UR3 | C4-N3-C2 | -5.43 | 120.21 | 124.58 |
| 40 | L5 | 4620 | OMU | C4-N3-C2 | -5.32 | 120.01 | 126.61 |
| 19 | S2 | 1248 | B8N | C5-C4-N3 | 5.31 | 125.78 | 116.15 |
| 19 | S2 | 1383 | A2M | C4'-O4'-C1' | -5.30 | 105.07 | 109.92 |
| 19 | S2 | 121 | OMU | C4-N3-C2 | -5.29 | 120.05 | 126.61 |
| 19 | S2 | 1288 | OMU | C4-N3-C2 | -5.26 | 120.08 | 126.61 |
| 19 | S2 | 116 | OMU | C4-N3-C2 | -5.24 | 120.10 | 126.61 |
| 40 | L5 | 1677 | PSU | C4-N3-C2 | -5.14 | 119.29 | 126.37 |
| 40 | L5 | 3718 | A2M | C4'-O4'-C1' | -4.99 | 105.35 | 109.92 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 2632 | PSU | N1-C2-N3 | 4.99 | 120.43 | 115.17 |
| 40 | L5 | 1677 | PSU | N1-C2-N3 | 4.98 | 120.42 | 115.17 |
| 40 | L5 | 2632 | PSU | C4-N3-C2 | -4.98 | 119.51 | 126.37 |
| 40 | L5 | 1871 | A2M | C4'-O4'-C1' | -4.97 | 105.38 | 109.92 |
| 40 | L5 | 4293 | PSU | C4-N3-C2 | -4.96 | 119.54 | 126.37 |
| 40 | L5 | 4636 | PSU | C4-N3-C2 | -4.93 | 119.58 | 126.37 |
| 19 | S2 | 1081 | PSU | N1-C2-N3 | 4.93 | 120.37 | 115.17 |
| 19 | S2 | 1081 | PSU | C4-N3-C2 | -4.93 | 119.58 | 126.37 |
| 40 | L5 | 4521 | PSU | C4-N3-C2 | -4.90 | 119.62 | 126.37 |
| 40 | L5 | 4500 | PSU | C4-N3-C2 | -4.90 | 119.62 | 126.37 |
| 40 | L5 | 4493 | PSU | C4-N3-C2 | -4.90 | 119.62 | 126.37 |
| 40 | L5 | 3884 | PSU | C4-N3-C2 | -4.89 | 119.63 | 126.37 |
| 40 | L5 | 4431 | PSU | C4-N3-C2 | -4.89 | 119.64 | 126.37 |
| 19 | S2 | 406 | PSU | C4-N3-C2 | -4.89 | 119.64 | 126.37 |
| 40 | L5 | 4552 | PSU | C4-N3-C2 | -4.88 | 119.64 | 126.37 |
| 40 | L5 | 4296 | PSU | C4-N3-C2 | -4.88 | 119.65 | 126.37 |
| 19 | S2 | 1232 | PSU | N1-C2-N3 | 4.87 | 120.30 | 115.17 |
| 40 | L5 | 1536 | PSU | C4-N3-C2 | -4.86 | 119.67 | 126.37 |
| 40 | L5 | 1782 | PSU | N1-C2-N3 | 4.86 | 120.30 | 115.17 |
| 40 | L5 | 3853 | PSU | C4-N3-C2 | -4.86 | 119.68 | 126.37 |
| 40 | L5 | 3637 | PSU | C4-N3-C2 | -4.86 | 119.68 | 126.37 |
| 40 | L5 | 4353 | PSU | C4-N3-C2 | -4.86 | 119.68 | 126.37 |
| 40 | L5 | 3822 | PSU | C4-N3-C2 | -4.85 | 119.68 | 126.37 |
| 19 | S2 | 649 | PSU | C4-N3-C2 | -4.85 | 119.69 | 126.37 |
| 19 | S2 | 686 | PSU | C4-N3-C2 | -4.85 | 119.69 | 126.37 |
| 40 | L5 | 3637 | PSU | N1-C2-N3 | 4.84 | 120.27 | 115.17 |
| 40 | L5 | 4972 | PSU | N1-C2-N3 | 4.84 | 120.27 | 115.17 |
| 19 | S2 | 1244 | PSU | N1-C2-N3 | 4.83 | 120.27 | 115.17 |
| 40 | L5 | 4521 | PSU | N1-C2-N3 | 4.83 | 120.26 | 115.17 |
| 40 | L5 | 4293 | PSU | N1-C2-N3 | 4.83 | 120.26 | 115.17 |
| 40 | L5 | 4431 | PSU | N1-C2-N3 | 4.83 | 120.26 | 115.17 |
| 42 | L8 | 55 | PSU | C4-N3-C2 | -4.83 | 119.72 | 126.37 |
| 40 | L5 | 4493 | PSU | N1-C2-N3 | 4.83 | 120.26 | 115.17 |
| 19 | S2 | 105 | PSU | N1-C2-N3 | 4.82 | 120.26 | 115.17 |
| 19 | S2 | 863 | PSU | N1-C2-N3 | 4.82 | 120.25 | 115.17 |
| 40 | L5 | 4552 | PSU | N1-C2-N3 | 4.82 | 120.25 | 115.17 |
| 40 | L5 | 1782 | PSU | C4-N3-C2 | -4.82 | 119.73 | 126.37 |
| 40 | L5 | 5010 | PSU | C4-N3-C2 | -4.81 | 119.74 | 126.37 |
| 40 | L5 | 3695 | PSU | N1-C2-N3 | 4.81 | 120.25 | 115.17 |
| 40 | L5 | 3920 | PSU | C4-N3-C2 | -4.81 | 119.75 | 126.37 |
| 40 | L5 | 3639 | PSU | N1-C2-N3 | 4.81 | 120.24 | 115.17 |
| 19 | S2 | 649 | PSU | N1-C2-N3 | 4.81 | 120.24 | 115.17 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 4299 | PSU | C4-N3-C2 | -4.81 | 119.75 | 126.37 |
| 40 | L5 | 3920 | PSU | N1-C2-N3 | 4.80 | 120.24 | 115.17 |
| 40 | L5 | 4579 | PSU | N1-C2-N3 | 4.80 | 120.23 | 115.17 |
| 42 | L8 | 55 | PSU | N1-C2-N3 | 4.80 | 120.23 | 115.17 |
| 40 | L5 | 4442 | PSU | N1-C2-N3 | 4.80 | 120.23 | 115.17 |
| 40 | L5 | 3818 | UY1 | C4-N3-C2 | -4.80 | 119.76 | 126.37 |
| 40 | L5 | 3844 | PSU | C4-N3-C2 | -4.80 | 119.77 | 126.37 |
| 40 | L5 | 1582 | PSU | N1-C2-N3 | 4.80 | 120.23 | 115.17 |
| 19 | S2 | 406 | PSU | N1-C2-N3 | 4.79 | 120.22 | 115.17 |
| 40 | L5 | 3853 | PSU | N1-C2-N3 | 4.79 | 120.22 | 115.17 |
| 40 | L5 | 4299 | PSU | N1-C2-N3 | 4.79 | 120.22 | 115.17 |
| 19 | S2 | 1232 | PSU | C4-N3-C2 | -4.79 | 119.78 | 126.37 |
| 40 | L5 | 4689 | PSU | N1-C2-N3 | 4.78 | 120.21 | 115.17 |
| 40 | L5 | 4500 | PSU | N1-C2-N3 | 4.78 | 120.20 | 115.17 |
| 40 | L5 | 4628 | PSU | N1-C2-N3 | 4.78 | 120.20 | 115.17 |
| 40 | L5 | 1862 | PSU | C4-N3-C2 | -4.78 | 119.79 | 126.37 |
| 40 | L5 | 1536 | PSU | N1-C2-N3 | 4.77 | 120.20 | 115.17 |
| 19 | S2 | 866 | PSU | C4-N3-C2 | -4.77 | 119.80 | 126.37 |
| 19 | S2 | 863 | PSU | C4-N3-C2 | -4.77 | 119.80 | 126.37 |
| 40 | L5 | 4673 | PSU | C4-N3-C2 | -4.77 | 119.80 | 126.37 |
| 40 | L5 | 4973 | PSU | C4-N3-C2 | -4.77 | 119.80 | 126.37 |
| 40 | L5 | 3639 | PSU | C4-N3-C2 | -4.77 | 119.80 | 126.37 |
| 40 | L5 | 1862 | PSU | N1-C2-N3 | 4.77 | 120.19 | 115.17 |
| 40 | L5 | 1860 | PSU | C4-N3-C2 | -4.76 | 119.81 | 126.37 |
| 19 | S2 | 1004 | PSU | N1-C2-N3 | 4.76 | 120.19 | 115.17 |
| 19 | S2 | 651 | PSU | N1-C2-N3 | 4.76 | 120.18 | 115.17 |
| 40 | L5 | 3822 | PSU | N1-C2-N3 | 4.76 | 120.18 | 115.17 |
| 40 | L5 | 4361 | PSU | N1-C2-N3 | 4.76 | 120.18 | 115.17 |
| 40 | L5 | 4579 | PSU | C4-N3-C2 | -4.76 | 119.82 | 126.37 |
| 19 | S2 | 651 | PSU | C4-N3-C2 | -4.75 | 119.82 | 126.37 |
| 40 | L5 | 4353 | PSU | N1-C2-N3 | 4.75 | 120.18 | 115.17 |
| 19 | S2 | 1367 | PSU | C4-N3-C2 | -4.75 | 119.83 | 126.37 |
| 40 | L5 | 3851 | PSU | C4-N3-C2 | -4.74 | 119.84 | 126.37 |
| 40 | L5 | 4972 | PSU | C4-N3-C2 | -4.74 | 119.84 | 126.37 |
| 40 | L5 | 4636 | PSU | N1-C2-N3 | 4.74 | 120.17 | 115.17 |
| 19 | S2 | 801 | PSU | N1-C2-N3 | 4.74 | 120.16 | 115.17 |
| 40 | L5 | 4973 | PSU | N1-C2-N3 | 4.73 | 120.16 | 115.17 |
| 40 | L5 | 1683 | PSU | N1-C2-N3 | 4.73 | 120.16 | 115.17 |
| 19 | S2 | 814 | PSU | C4-N3-C2 | -4.73 | 119.85 | 126.37 |
| 19 | S2 | 681 | PSU | N1-C2-N3 | 4.73 | 120.16 | 115.17 |
| 40 | L5 | 1582 | PSU | C4-N3-C2 | -4.73 | 119.86 | 126.37 |
| 19 | S2 | 681 | PSU | C4-N3-C2 | -4.72 | 119.86 | 126.37 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 19 | S2 | 1174 | PSU | C4-N3-C2 | -4.72 | 119.86 | 126.37 |
| 40 | L5 | 4296 | PSU | N1-C2-N3 | 4.72 | 120.15 | 115.17 |
| 19 | S2 | 1367 | PSU | N1-C2-N3 | 4.71 | 120.14 | 115.17 |
| 19 | S2 | 109 | PSU | C4-N3-C2 | -4.71 | 119.88 | 126.37 |
| 19 | S2 | 1177 | PSU | C4-N3-C2 | -4.71 | 119.88 | 126.37 |
| 40 | L5 | 1792 | PSU | N1-C2-N3 | 4.71 | 120.13 | 115.17 |
| 40 | L5 | 3851 | PSU | N1-C2-N3 | 4.71 | 120.13 | 115.17 |
| 40 | L5 | 3695 | PSU | C4-N3-C2 | -4.70 | 119.89 | 126.37 |
| 40 | L5 | 3884 | PSU | N1-C2-N3 | 4.70 | 120.13 | 115.17 |
| 19 | S2 | 1056 | PSU | N1-C2-N3 | 4.70 | 120.13 | 115.17 |
| 19 | S2 | 1045 | PSU | N1-C2-N3 | 4.70 | 120.13 | 115.17 |
| 40 | L5 | 5010 | PSU | N1-C2-N3 | 4.70 | 120.13 | 115.17 |
| 42 | L8 | 69 | PSU | C4-N3-C2 | -4.70 | 119.90 | 126.37 |
| 19 | S2 | 966 | PSU | C4-N3-C2 | -4.70 | 119.90 | 126.37 |
| 40 | L5 | 4403 | PSU | C4-N3-C2 | -4.70 | 119.90 | 126.37 |
| 19 | S2 | 1046 | PSU | N1-C2-N3 | 4.69 | 120.12 | 115.17 |
| 40 | L5 | 4673 | PSU | N1-C2-N3 | 4.69 | 120.12 | 115.17 |
| 40 | L5 | 1860 | PSU | N1-C2-N3 | 4.69 | 120.11 | 115.17 |
| 19 | S2 | 93 | PSU | N1-C2-N3 | 4.69 | 120.11 | 115.17 |
| 40 | L5 | 4312 | PSU | N1-C2-N3 | 4.69 | 120.11 | 115.17 |
| 40 | L5 | 1683 | PSU | C4-N3-C2 | -4.68 | 119.92 | 126.37 |
| 40 | L5 | 5001 | PSU | C4-N3-C2 | -4.68 | 119.93 | 126.37 |
| 40 | L5 | 4312 | PSU | C4-N3-C2 | -4.68 | 119.93 | 126.37 |
| 40 | L5 | 3844 | PSU | N1-C2-N3 | 4.68 | 120.10 | 115.17 |
| 40 | L5 | 4628 | PSU | C4-N3-C2 | -4.67 | 119.93 | 126.37 |
| 40 | L5 | 4532 | PSU | N1-C2-N3 | 4.67 | 120.10 | 115.17 |
| 19 | S2 | 1174 | PSU | N1-C2-N3 | 4.67 | 120.09 | 115.17 |
| 19 | S2 | 966 | PSU | N1-C2-N3 | 4.67 | 120.09 | 115.17 |
| 40 | L5 | 4442 | PSU | C4-N3-C2 | -4.67 | 119.94 | 126.37 |
| 19 | S2 | 1244 | PSU | C4-N3-C2 | -4.67 | 119.94 | 126.37 |
| 19 | S2 | 1045 | PSU | C4-N3-C2 | -4.66 | 119.95 | 126.37 |
| 19 | S2 | 1177 | PSU | N1-C2-N3 | 4.66 | 120.08 | 115.17 |
| 19 | S2 | 686 | PSU | N1-C2-N3 | 4.66 | 120.08 | 115.17 |
| 19 | S2 | 93 | PSU | C4-N3-C2 | -4.64 | 119.98 | 126.37 |
| 19 | S2 | 801 | PSU | C4-N3-C2 | -4.63 | 119.99 | 126.37 |
| 19 | S2 | 1056 | PSU | C4-N3-C2 | -4.63 | 120.00 | 126.37 |
| 19 | S2 | 109 | PSU | N1-C2-N3 | 4.63 | 120.05 | 115.17 |
| 19 | S2 | 866 | PSU | N1-C2-N3 | 4.62 | 120.05 | 115.17 |
| 40 | L5 | 4576 | PSU | C4-N3-C2 | -4.62 | 120.01 | 126.37 |
| 40 | L5 | 1744 | PSU | C4-N3-C2 | -4.61 | 120.02 | 126.37 |
| 40 | L5 | 4457 | PSU | C4-N3-C2 | -4.61 | 120.02 | 126.37 |
| 19 | S2 | 1004 | PSU | C4-N3-C2 | -4.61 | 120.02 | 126.37 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 1792 | PSU | C4-N3-C2 | -4.60 | 120.03 | 126.37 |
| 19 | S2 | 814 | PSU | N1-C2-N3 | 4.60 | 120.02 | 115.17 |
| 19 | S2 | 105 | PSU | C4-N3-C2 | -4.59 | 120.04 | 126.37 |
| 40 | L5 | 4361 | PSU | C4-N3-C2 | -4.59 | 120.05 | 126.37 |
| 19 | S2 | 1046 | PSU | C4-N3-C2 | -4.59 | 120.05 | 126.37 |
| 19 | S2 | 99 | A2M | C4'-O4'-C1' | -4.59 | 105.72 | 109.92 |
| 40 | L5 | 1781 | PSU | N1-C2-N3 | 4.59 | 120.01 | 115.17 |
| 40 | L5 | 4471 | PSU | N1-C2-N3 | 4.58 | 120.00 | 115.17 |
| 40 | L5 | 4457 | PSU | N1-C2-N3 | 4.58 | 120.00 | 115.17 |
| 40 | L5 | 4576 | PSU | N1-C2-N3 | 4.57 | 119.99 | 115.17 |
| 40 | L5 | 4403 | PSU | N1-C2-N3 | 4.57 | 119.98 | 115.17 |
| 42 | L8 | 69 | PSU | N1-C2-N3 | 4.57 | 119.98 | 115.17 |
| 40 | L5 | 5001 | PSU | N1-C2-N3 | 4.56 | 119.97 | 115.17 |
| 19 | S2 | 468 | A2M | C4'-O4'-C1' | -4.56 | 105.75 | 109.92 |
| 19 | S2 | 27 | A2M | C4'-O4'-C1' | -4.55 | 105.76 | 109.92 |
| 40 | L5 | 2839 | PSU | N1-C2-N3 | 4.54 | 119.96 | 115.17 |
| 40 | L5 | 398 | A2M | C4'-O4'-C1' | -4.54 | 105.77 | 109.92 |
| 40 | L5 | 2839 | PSU | C4-N3-C2 | -4.54 | 120.12 | 126.37 |
| 40 | L5 | 4689 | PSU | C4-N3-C2 | -4.54 | 120.12 | 126.37 |
| 40 | L5 | 4532 | PSU | C4-N3-C2 | -4.53 | 120.13 | 126.37 |
| 40 | L5 | 1744 | PSU | N1-C2-N3 | 4.52 | 119.94 | 115.17 |
| 19 | S2 | 1248 | B8N | C4-N3-C2 | -4.50 | 120.09 | 125.62 |
| 40 | L5 | 1781 | PSU | C4-N3-C2 | -4.49 | 120.18 | 126.37 |
| 19 | S2 | 166 | A2M | C4'-O4'-C1' | -4.47 | 105.83 | 109.92 |
| 40 | L5 | 4471 | PSU | C4-N3-C2 | -4.46 | 120.23 | 126.37 |
| 40 | L5 | 3818 | UY1 | N1-C2-N3 | 4.44 | 119.85 | 115.17 |
| 40 | L5 | 3830 | A2M | C4'-O4'-C1' | -4.37 | 105.92 | 109.92 |
| 40 | L5 | 4590 | A2M | C4'-O4'-C1' | -4.35 | 105.94 | 109.92 |
| 40 | L5 | 2363 | A2M | C4'-O4'-C1' | -4.26 | 106.02 | 109.92 |
| 19 | S2 | 1832 | 6MZ | C2-N1-C6 | 4.20 | 119.86 | 116.60 |
| 40 | L5 | 4523 | A2M | C1'-N9-C4 | -4.19 | 119.28 | 126.64 |
| 40 | L5 | 1534 | A2M | C4'-O4'-C1' | -4.16 | 106.11 | 109.92 |
| 40 | L5 | 1871 | A2M | C1'-N9-C4 | -4.10 | 119.44 | 126.64 |
| 19 | S2 | 1383 | A2M | C3'-C2'-C1' | -4.03 | 95.08 | 102.81 |
| 40 | L5 | 2401 | A2M | C4'-O4'-C1' | -3.98 | 106.28 | 109.92 |
| 19 | S2 | 121 | OMU | N3-C2-N1 | 3.98 | 120.07 | 114.89 |
| 19 | S2 | 166 | A2M | C1'-N9-C4 | -3.96 | 119.69 | 126.64 |
| 19 | S2 | 576 | A2M | C4'-O4'-C1' | -3.95 | 106.31 | 109.92 |
| 19 | S2 | 1383 | A2M | C1'-N9-C4 | -3.95 | 119.70 | 126.64 |
| 19 | S2 | 1288 | OMU | N3-C2-N1 | 3.94 | 120.02 | 114.89 |
| 40 | L5 | 2837 | OMU | N3-C2-N1 | 3.93 | 120.01 | 114.89 |
| 40 | L5 | 3925 | OMU | N3-C2-N1 | 3.93 | 120.00 | 114.89 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 4220 | 6MZ | C9-N6-C6 | -3.92 | 119.21 | 122.85 |
| 40 | L5 | 4227 | OMU | N3-C2-N1 | 3.92 | 120.00 | 114.89 |
| 40 | L5 | 1323 | A2M | C4'-O4'-C1' | -3.92 | 106.33 | 109.92 |
| 40 | L5 | 3785 | A2M | C1'-N9-C4 | -3.91 | 119.77 | 126.64 |
| 19 | S2 | 1031 | A2M | C4'-O4'-C1' | -3.91 | 106.35 | 109.92 |
| 19 | S2 | 799 | OMU | N3-C2-N1 | 3.90 | 119.97 | 114.89 |
| 19 | S2 | 1832 | 6MZ | C4'-O4'-C1' | -3.88 | 106.37 | 109.92 |
| 19 | S2 | 668 | A2M | C4'-O4'-C1' | -3.87 | 106.38 | 109.92 |
| 19 | S2 | 354 | OMU | N3-C2-N1 | 3.85 | 119.90 | 114.89 |
| 40 | L5 | 4590 | A2M | C1'-N9-C4 | -3.84 | 119.89 | 126.64 |
| 19 | S2 | 1326 | OMU | N3-C2-N1 | 3.84 | 119.89 | 114.89 |
| 40 | L5 | 4498 | OMU | N3-C2-N1 | 3.83 | 119.88 | 114.89 |
| 19 | S2 | 172 | OMU | C5-C4-N3 | 3.82 | 120.15 | 114.80 |
| 40 | L5 | 3830 | A2M | C1'-N9-C4 | -3.80 | 119.96 | 126.64 |
| 19 | S2 | 428 | OMU | N3-C2-N1 | 3.80 | 119.83 | 114.89 |
| 19 | S2 | 1442 | OMU | N3-C2-N1 | 3.80 | 119.83 | 114.89 |
| 19 | S2 | 468 | A2M | C1'-N9-C4 | -3.79 | 119.98 | 126.64 |
| 40 | L5 | 4306 | OMU | N3-C2-N1 | 3.79 | 119.83 | 114.89 |
| 40 | L5 | 1534 | A2M | C1'-N9-C4 | -3.78 | 120.00 | 126.64 |
| 40 | L5 | 3867 | A2M | C1'-N9-C4 | -3.78 | 120.00 | 126.64 |
| 19 | S2 | 627 | OMU | N3-C2-N1 | 3.76 | 119.78 | 114.89 |
| 19 | S2 | 668 | A2M | C1'-N9-C4 | -3.75 | 120.06 | 126.64 |
| 40 | L5 | 2401 | A2M | C1'-N9-C4 | -3.74 | 120.07 | 126.64 |
| 19 | S2 | 99 | A2M | C1'-N9-C4 | -3.74 | 120.08 | 126.64 |
| 40 | L5 | 2837 | OMU | C5-C4-N3 | 3.73 | 120.03 | 114.80 |
| 40 | L5 | 3718 | A2M | C3'-C2'-C1' | -3.72 | 95.67 | 102.81 |
| 40 | L5 | 398 | A2M | C1'-N9-C4 | -3.72 | 120.11 | 126.64 |
| 40 | L5 | 4571 | A2M | C4'-O4'-C1' | -3.71 | 106.53 | 109.92 |
| 40 | L5 | 3867 | A2M | C4'-O4'-C1' | -3.71 | 106.53 | 109.92 |
| 19 | S2 | 116 | OMU | N3-C2-N1 | 3.70 | 119.71 | 114.89 |
| 19 | S2 | 1326 | OMU | C5-C4-N3 | 3.70 | 119.98 | 114.80 |
| 40 | L5 | 3925 | OMU | C5-C4-N3 | 3.70 | 119.98 | 114.80 |
| 19 | S2 | 627 | OMU | C5-C4-N3 | 3.69 | 119.97 | 114.80 |
| 19 | S2 | 27 | A2M | C1'-N9-C4 | -3.68 | 120.17 | 126.64 |
| 40 | L5 | 4620 | OMU | N3-C2-N1 | 3.65 | 119.64 | 114.89 |
| 19 | S2 | 1248 | B8N | C1'-C5-C4 | 3.64 | 123.14 | 117.61 |
| 19 | S2 | 799 | OMU | C5-C4-N3 | 3.64 | 119.90 | 114.80 |
| 40 | L5 | 3825 | A2M | C4'-O4'-C1' | -3.64 | 106.59 | 109.92 |
| 19 | S2 | 172 | OMU | N3-C2-N1 | 3.64 | 119.62 | 114.89 |
| 40 | L5 | 400 | A2M | C1'-N9-C4 | -3.62 | 120.28 | 126.64 |
| 40 | L5 | 400 | A2M | C4'-O4'-C1' | -3.62 | 106.61 | 109.92 |
| 19 | S2 | 428 | OMU | C5-C4-N3 | 3.61 | 119.86 | 114.80 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 19 | S2 | 1851 | MA6 | C2-N1-C6 | 3.59 | 120.36 | 116.84 |
| 40 | L5 | 4530 | UR3 | C5-C4-N3 | 3.58 | 119.76 | 115.04 |
| 40 | L5 | 4227 | OMU | C5-C4-N3 | 3.58 | 119.81 | 114.80 |
| 40 | L5 | 3718 | A2M | C1'-N9-C4 | -3.57 | 120.36 | 126.64 |
| 40 | L5 | 4306 | OMU | C5-C4-N3 | 3.56 | 119.79 | 114.80 |
| 40 | L5 | 4620 | OMU | C5-C4-N3 | 3.56 | 119.78 | 114.80 |
| 19 | S2 | 354 | OMU | C5-C4-N3 | 3.56 | 119.78 | 114.80 |
| 40 | L5 | 1323 | A2M | C1'-N9-C4 | -3.56 | 120.39 | 126.64 |
| 40 | L5 | 4220 | 6MZ | C2-N1-C6 | 3.55 | 119.35 | 116.60 |
| 19 | S2 | 1442 | OMU | C5-C4-N3 | 3.54 | 119.76 | 114.80 |
| 40 | L5 | 1871 | A2M | C3'-C2'-C1' | -3.54 | 96.02 | 102.81 |
| 19 | S2 | 1031 | A2M | C1'-N9-C4 | -3.53 | 120.43 | 126.64 |
| 40 | L5 | 4523 | A2M | C3'-C2'-C1' | -3.53 | 96.04 | 102.81 |
| 40 | L5 | 4498 | OMU | C5-C4-N3 | 3.51 | 119.72 | 114.80 |
| 19 | S2 | 484 | A2M | C1'-N9-C4 | -3.51 | 120.48 | 126.64 |
| 40 | L5 | 3718 | A2M | O3'-C3'-C2' | 3.50 | 120.97 | 111.19 |
| 19 | S2 | 576 | A2M | C1'-N9-C4 | -3.49 | 120.50 | 126.64 |
| 40 | L5 | 1326 | A2M | C1'-N9-C4 | -3.49 | 120.51 | 126.64 |
| 40 | L5 | 2363 | A2M | C1'-N9-C4 | -3.48 | 120.53 | 126.64 |
| 19 | S2 | 576 | A2M | O3'-C3'-C2' | 3.48 | 120.92 | 111.19 |
| 40 | L5 | 3818 | UY1 | C6-C5-C4 | 3.46 | 120.51 | 118.17 |
| 19 | S2 | 116 | OMU | C5-C4-N3 | 3.44 | 119.62 | 114.80 |
| 40 | L5 | 1326 | A2M | C4'-O4'-C1' | -3.43 | 106.78 | 109.92 |
| 19 | S2 | 159 | A2M | C1'-N9-C4 | -3.37 | 120.72 | 126.64 |
| 19 | S2 | 1383 | A2M | O3'-C3'-C2' | 3.37 | 120.61 | 111.19 |
| 19 | S2 | 99 | A2M | C3'-C2'-C1' | -3.37 | 96.36 | 102.81 |
| 40 | L5 | 3830 | A2M | C3'-C2'-C1' | -3.36 | 96.37 | 102.81 |
| 40 | L5 | 4571 | A2M | C1'-N9-C4 | -3.35 | 120.76 | 126.64 |
| 40 | L5 | 3825 | A2M | C1'-N9-C4 | -3.35 | 120.76 | 126.64 |
| 19 | S2 | 121 | OMU | C5-C4-N3 | 3.32 | 119.44 | 114.80 |
| 40 | L5 | 1534 | A2M | C3'-C2'-C1' | -3.31 | 96.46 | 102.81 |
| 19 | S2 | 1288 | OMU | C5-C4-N3 | 3.30 | 119.43 | 114.80 |
| 19 | S2 | 99 | A2M | O3'-C3'-C2' | 3.28 | 120.36 | 111.19 |
| 19 | S2 | 1248 | B8N | N3-C2-N1 | 3.26 | 120.70 | 116.72 |
| 40 | L5 | 398 | A2M | O3'-C3'-C2' | 3.25 | 120.30 | 111.19 |
| 40 | L5 | 2787 | A2M | C1'-N9-C4 | -3.25 | 120.92 | 126.64 |
| 19 | S2 | 1850 | MA6 | C2-N1-C6 | 3.25 | 120.03 | 116.84 |
| 40 | L5 | 2815 | A2M | C4'-O4'-C1' | -3.23 | 106.97 | 109.92 |
| 40 | L5 | 398 | A2M | C3'-C2'-C1' | -3.20 | 96.69 | 102.81 |
| 40 | L5 | 2363 | A2M | C3'-C2'-C1' | -3.19 | 96.69 | 102.81 |
| 40 | L5 | 3785 | A2M | O3'-C3'-C2' | 3.17 | 120.05 | 111.19 |
| 40 | L5 | 3818 | UY1 | C6-N1-C2 | -3.16 | 119.76 | 122.69 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 400 | A2M | O3'-C3'-C2' | 3.16 | 120.02 | 111.19 |
| 40 | L5 | 1871 | A2M | O3'-C3'-C2' | 3.14 | 119.98 | 111.19 |
| 19 | S2 | 576 | A2M | C3'-C2'-C1' | -3.13 | 96.81 | 102.81 |
| 40 | L5 | 2837 | OMU | O4-C4-C5 | -3.11 | 119.81 | 125.16 |
| 19 | S2 | 159 | A2M | O3'-C3'-C2' | 3.10 | 119.86 | 111.19 |
| 40 | L5 | 4523 | A2M | O3'-C3'-C2' | 3.08 | 119.82 | 111.19 |
| 40 | L5 | 1524 | A2M | C1'-N9-C4 | -3.08 | 121.23 | 126.64 |
| 19 | S2 | 27 | A2M | O3'-C3'-C2' | 3.08 | 119.80 | 111.19 |
| 19 | S2 | 166 | A2M | O3'-C3'-C2' | 3.07 | 119.79 | 111.19 |
| 40 | L5 | 3830 | A2M | O3'-C3'-C2' | 3.07 | 119.79 | 111.19 |
| 40 | L5 | 2861 | OMC | C1'-N1-C2 | 3.06 | 125.19 | 118.44 |
| 40 | L5 | 1677 | PSU | C6-C5-C4 | 3.06 | 120.24 | 118.17 |
| 19 | S2 | 166 | A2M | C3'-C2'-C1' | -3.05 | 96.96 | 102.81 |
| 40 | L5 | 2787 | A2M | O3'-C3'-C2' | 3.03 | 119.67 | 111.19 |
| 40 | L5 | 1683 | PSU | O2-C2-N1 | -3.03 | 119.67 | 122.79 |
| 19 | S2 | 1031 | A2M | O3'-C3'-C2' | 3.02 | 119.63 | 111.19 |
| 40 | L5 | 4689 | PSU | O2-C2-N1 | -3.02 | 119.68 | 122.79 |
| 19 | S2 | 668 | A2M | O3'-C3'-C2' | 3.01 | 119.62 | 111.19 |
| 19 | S2 | 172 | OMU | O4-C4-C5 | -2.99 | 120.00 | 125.16 |
| 40 | L5 | 1524 | A2M | O3'-C3'-C2' | 2.99 | 119.55 | 111.19 |
| 40 | L5 | 3925 | OMU | O4-C4-C5 | -2.99 | 120.01 | 125.16 |
| 40 | L5 | 2787 | A2M | O4'-C1'-C2' | 2.97 | 111.68 | 106.61 |
| 19 | S2 | 1442 | OMU | O4-C4-C5 | -2.97 | 120.03 | 125.16 |
| 19 | S2 | 468 | A2M | O3'-C3'-C2' | 2.97 | 119.50 | 111.19 |
| 19 | S2 | 27 | A2M | C3'-C2'-C1' | -2.97 | 97.12 | 102.81 |
| 40 | L5 | 4571 | A2M | O3'-C3'-C2' | 2.96 | 119.48 | 111.19 |
| 40 | L5 | 3825 | A2M | O3'-C3'-C2' | 2.96 | 119.46 | 111.19 |
| 40 | L5 | 4306 | OMU | O4-C4-C5 | -2.95 | 120.07 | 125.16 |
| 40 | L5 | 2401 | A2M | O3'-C3'-C2' | 2.95 | 119.43 | 111.19 |
| 19 | S2 | 428 | OMU | O4-C4-C5 | -2.94 | 120.10 | 125.16 |
| 40 | L5 | 4628 | PSU | O2-C2-N1 | -2.93 | 119.77 | 122.79 |
| 40 | L5 | 4689 | PSU | C6-N1-C2 | -2.92 | 119.98 | 122.69 |
| 40 | L5 | 2363 | A2M | O3'-C3'-C2' | 2.92 | 119.37 | 111.19 |
| 19 | S2 | 799 | OMU | O4-C4-C5 | -2.92 | 120.12 | 125.16 |
| 40 | L5 | 3785 | A2M | O4'-C1'-N9 | 2.92 | 112.62 | 108.75 |
| 19 | S2 | 468 | A2M | C3'-C2'-C1' | -2.91 | 97.24 | 102.81 |
| 19 | S2 | 354 | OMU | O4-C4-C5 | -2.91 | 120.15 | 125.16 |
| 19 | S2 | 627 | OMU | O4-C4-C5 | -2.90 | 120.16 | 125.16 |
| 40 | L5 | 4227 | OMU | O4-C4-C5 | -2.90 | 120.16 | 125.16 |
| 40 | L5 | 4620 | OMU | O4-C4-C5 | -2.89 | 120.17 | 125.16 |
| 40 | L5 | 4498 | OMU | O4-C4-C5 | -2.89 | 120.18 | 125.16 |
| 40 | L5 | 1534 | A2M | O3'-C3'-C2' | 2.88 | 119.26 | 111.19 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 4590 | A2M | O3'-C3'-C2' | 2.88 | 119.25 | 111.19 |
| 19 | S2 | 1232 | PSU | O2-C2-N1 | -2.88 | 119.82 | 122.79 |
| 40 | L5 | 4521 | PSU | O2-C2-N1 | -2.88 | 119.82 | 122.79 |
| 40 | L5 | 4500 | PSU | O2-C2-N1 | -2.86 | 119.83 | 122.79 |
| 40 | L5 | 2632 | PSU | O2-C2-N1 | -2.86 | 119.84 | 122.79 |
| 40 | L5 | 4457 | PSU | O2-C2-N1 | -2.86 | 119.84 | 122.79 |
| 19 | S2 | 116 | OMU | O4-C4-C5 | -2.85 | 120.24 | 125.16 |
| 19 | S2 | 105 | PSU | O2-C2-N1 | -2.85 | 119.84 | 122.79 |
| 40 | L5 | 4442 | PSU | O2-C2-N1 | -2.85 | 119.85 | 122.79 |
| 40 | L5 | 1326 | A2M | O3'-C3'-C2' | 2.85 | 119.17 | 111.19 |
| 19 | S2 | 1244 | PSU | O2-C2-N1 | -2.85 | 119.85 | 122.79 |
| 19 | S2 | 1639 | G7M | C2-N1-C6 | -2.85 | 119.89 | 125.11 |
| 19 | S2 | 1326 | OMU | O4-C4-C5 | -2.85 | 120.25 | 125.16 |
| 19 | S2 | 1248 | B8N | O4-C4-N3 | -2.84 | 115.38 | 119.99 |
| 40 | L5 | 4973 | PSU | O2-C2-N1 | -2.83 | 119.87 | 122.79 |
| 19 | S2 | 681 | PSU | O2-C2-N1 | -2.83 | 119.87 | 122.79 |
| 40 | L5 | 4636 | PSU | O2-C2-N1 | -2.82 | 119.88 | 122.79 |
| 40 | L5 | 1782 | PSU | O2-C2-N1 | -2.81 | 119.89 | 122.79 |
| 40 | L5 | 2401 | A2M | C3'-C2'-C1' | -2.79 | 97.46 | 102.81 |
| 19 | S2 | 121 | OMU | O4-C4-C5 | -2.79 | 120.35 | 125.16 |
| 19 | S2 | 1081 | PSU | O2-C2-N1 | -2.78 | 119.92 | 122.79 |
| 40 | L5 | 2632 | PSU | C6-C5-C4 | 2.78 | 120.05 | 118.17 |
| 19 | S2 | 1056 | PSU | O2-C2-N1 | -2.78 | 119.92 | 122.79 |
| 19 | S2 | 649 | PSU | O2-C2-N1 | -2.78 | 119.92 | 122.79 |
| 40 | L5 | 4312 | PSU | O2-C2-N1 | -2.77 | 119.93 | 122.79 |
| 40 | L5 | 3822 | PSU | O2-C2-N1 | -2.77 | 119.93 | 122.79 |
| 19 | S2 | 1174 | PSU | O2-C2-N1 | -2.77 | 119.93 | 122.79 |
| 40 | L5 | 1860 | PSU | O2-C2-N1 | -2.77 | 119.94 | 122.79 |
| 19 | S2 | 484 | A2M | O3'-C3'-C2' | 2.77 | 118.93 | 111.19 |
| 19 | S2 | 801 | PSU | O2-C2-N1 | -2.76 | 119.94 | 122.79 |
| 40 | L5 | 3808 | OMC | C1'-N1-C2 | 2.75 | 124.52 | 118.44 |
| 40 | L5 | 3853 | PSU | O2-C2-N1 | -2.75 | 119.95 | 122.79 |
| 19 | S2 | 484 | A2M | C4'-O4'-C1' | -2.75 | 107.40 | 109.92 |
| 40 | L5 | 3637 | PSU | O2-C2-N1 | -2.74 | 119.96 | 122.79 |
| 19 | S2 | 863 | PSU | O2-C2-N1 | -2.74 | 119.96 | 122.79 |
| 19 | S2 | 1177 | PSU | O2-C2-N1 | -2.74 | 119.96 | 122.79 |
| 19 | S2 | 668 | A2M | O4'-C1'-C2' | 2.74 | 111.27 | 106.61 |
| 40 | L5 | 4590 | A2M | C3'-C2'-C1' | -2.74 | 97.57 | 102.81 |
| 19 | S2 | 651 | PSU | O2-C2-N1 | -2.73 | 119.97 | 122.79 |
| 19 | S2 | 1367 | PSU | O2-C2-N1 | -2.73 | 119.97 | 122.79 |
| 40 | L5 | 2815 | A2M | O3'-C3'-C2' | 2.72 | 118.81 | 111.19 |
| 19 | S2 | 1046 | PSU | O2-C2-N1 | -2.72 | 119.98 | 122.79 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 4972 | PSU | O2-C2-N1 | -2.72 | 119.98 | 122.79 |
| 19 | S2 | 1004 | PSU | O2-C2-N1 | -2.71 | 119.99 | 122.79 |
| 40 | L5 | 3867 | A2M | O3'-C3'-C2' | 2.71 | 118.77 | 111.19 |
| 40 | L5 | 4576 | PSU | O2-C2-N1 | -2.71 | 120.00 | 122.79 |
| 40 | L5 | 1323 | A2M | C2'-C1'-N9 | 2.71 | 118.57 | 112.56 |
| 19 | S2 | 1288 | OMU | O4-C4-C5 | -2.70 | 120.50 | 125.16 |
| 19 | S2 | 406 | PSU | O2-C2-N1 | -2.70 | 120.00 | 122.79 |
| 19 | S2 | 1004 | PSU | C6-N1-C2 | -2.70 | 120.19 | 122.69 |
| 40 | L5 | 4579 | PSU | O2-C2-N1 | -2.70 | 120.00 | 122.79 |
| 40 | L5 | 2815 | A2M | C1'-N9-C4 | -2.70 | 121.90 | 126.64 |
| 19 | S2 | 105 | PSU | C6-N1-C2 | -2.70 | 120.19 | 122.69 |
| 19 | S2 | 866 | PSU | O2-C2-N1 | -2.70 | 120.01 | 122.79 |
| 40 | L5 | 3920 | PSU | O2-C2-N1 | -2.69 | 120.01 | 122.79 |
| 40 | L5 | 1862 | PSU | O2-C2-N1 | -2.69 | 120.02 | 122.79 |
| 40 | L5 | 1536 | PSU | O2-C2-N1 | -2.69 | 120.02 | 122.79 |
| 40 | L5 | 3639 | PSU | O2-C2-N1 | -2.69 | 120.02 | 122.79 |
| 42 | L8 | 55 | PSU | O2-C2-N1 | -2.68 | 120.03 | 122.79 |
| 40 | L5 | 1792 | PSU | O2-C2-N1 | -2.67 | 120.03 | 122.79 |
| 40 | L5 | 1323 | A2M | O3'-C3'-C2' | 2.67 | 118.67 | 111.19 |
| 40 | L5 | 1744 | PSU | O2-C2-N1 | -2.67 | 120.03 | 122.79 |
| 40 | L5 | 4293 | PSU | O2-C2-N1 | -2.67 | 120.04 | 122.79 |
| 40 | L5 | 1582 | PSU | O2-C2-N1 | -2.67 | 120.04 | 122.79 |
| 40 | L5 | 2839 | PSU | O2-C2-N1 | -2.66 | 120.04 | 122.79 |
| 40 | L5 | 1524 | A2M | O4'-C1'-C2' | 2.66 | 111.14 | 106.61 |
| 40 | L5 | 4493 | PSU | O2-C2-N1 | -2.66 | 120.05 | 122.79 |
| 40 | L5 | 1677 | PSU | O2-C2-N1 | -2.65 | 120.05 | 122.79 |
| 40 | L5 | 2815 | A2M | C2'-C1'-N9 | 2.65 | 118.44 | 112.56 |
| 40 | L5 | 3884 | PSU | O2-C2-N1 | -2.65 | 120.06 | 122.79 |
| 40 | L5 | 4628 | PSU | C6-N1-C2 | -2.64 | 120.24 | 122.69 |
| 19 | S2 | 109 | PSU | O2-C2-N1 | -2.63 | 120.07 | 122.79 |
| 19 | S2 | 1850 | MA6 | C4'-O4'-C1' | -2.63 | 107.52 | 109.92 |
| 19 | S2 | 966 | PSU | O2-C2-N1 | -2.62 | 120.08 | 122.79 |
| 40 | L5 | 3851 | PSU | O2-C2-N1 | -2.62 | 120.08 | 122.79 |
| 40 | L5 | 1781 | PSU | O2-C2-N1 | -2.62 | 120.08 | 122.79 |
| 40 | L5 | 4353 | PSU | O2-C2-N1 | -2.62 | 120.08 | 122.79 |
| 40 | L5 | 1326 | A2M | C2'-C1'-N9 | 2.62 | 118.38 | 112.56 |
| 40 | L5 | 1683 | PSU | C6-N1-C2 | -2.62 | 120.26 | 122.69 |
| 19 | S2 | 686 | PSU | O2-C2-N1 | -2.61 | 120.09 | 122.79 |
| 40 | L5 | 3695 | PSU | C6-N1-C2 | -2.61 | 120.27 | 122.69 |
| 19 | S2 | 1244 | PSU | C6-N1-C2 | -2.61 | 120.27 | 122.69 |
| 40 | L5 | 4532 | PSU | O2-C2-N1 | -2.61 | 120.10 | 122.79 |
| 19 | S2 | 1045 | PSU | O2-C2-N1 | -2.60 | 120.10 | 122.79 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 1323 | A2M | O4'-C1'-C2' | 2.60 | 111.04 | 106.61 |
| 40 | L5 | 4673 | PSU | O2-C2-N1 | -2.60 | 120.11 | 122.79 |
| 19 | S2 | 1056 | PSU | C6-N1-C2 | -2.60 | 120.28 | 122.69 |
| 40 | L5 | 4532 | PSU | C6-N1-C2 | -2.60 | 120.28 | 122.69 |
| 40 | L5 | 4471 | PSU | O2-C2-N1 | -2.60 | 120.11 | 122.79 |
| 40 | L5 | 4299 | PSU | O2-C2-N1 | -2.59 | 120.11 | 122.79 |
| 40 | L5 | 4442 | PSU | C6-N1-C2 | -2.59 | 120.29 | 122.69 |
| 40 | L5 | 400 | A2M | C3'-C2'-C1' | -2.59 | 97.85 | 102.81 |
| 40 | L5 | 5010 | PSU | O2-C2-N1 | -2.59 | 120.12 | 122.79 |
| 40 | L5 | 4471 | PSU | C6-N1-C2 | -2.59 | 120.29 | 122.69 |
| 19 | S2 | 1337 | 4AC | N4-C4-N3 | 2.58 | 118.06 | 113.87 |
| 40 | L5 | 4296 | PSU | O2-C2-N1 | -2.58 | 120.13 | 122.79 |
| 40 | L5 | 4361 | PSU | O2-C2-N1 | -2.57 | 120.14 | 122.79 |
| 40 | L5 | 3867 | A2M | C3'-C2'-C1' | -2.57 | 97.89 | 102.81 |
| 19 | S2 | 814 | PSU | O2-C2-N1 | -2.56 | 120.14 | 122.79 |
| 40 | L5 | 4579 | PSU | C6-N1-C2 | -2.56 | 120.32 | 122.69 |
| 40 | L5 | 3818 | UY1 | O2-C2-N1 | -2.55 | 120.15 | 122.79 |
| 19 | S2 | 681 | PSU | C6-N1-C2 | -2.55 | 120.32 | 122.69 |
| 19 | S2 | 1031 | A2M | C3'-C2'-C1' | -2.55 | 97.92 | 102.81 |
| 19 | S2 | 1391 | OMC | C1'-N1-C2 | 2.55 | 124.06 | 118.44 |
| 40 | L5 | 1782 | PSU | C6-N1-C2 | -2.53 | 120.34 | 122.69 |
| 19 | S2 | 93 | PSU | O2-C2-N1 | -2.53 | 120.18 | 122.79 |
| 19 | S2 | 1288 | OMU | C1'-N1-C2 | 2.52 | 122.12 | 117.59 |
| 40 | L5 | 4431 | PSU | O2-C2-N1 | -2.52 | 120.19 | 122.79 |
| 40 | L5 | 2839 | PSU | C6-N1-C2 | -2.51 | 120.36 | 122.69 |
| 42 | L8 | 69 | PSU | O2-C2-N1 | -2.50 | 120.20 | 122.79 |
| 40 | L5 | 1582 | PSU | C6-N1-C2 | -2.50 | 120.37 | 122.69 |
| 40 | L5 | 4972 | PSU | C6-N1-C2 | -2.50 | 120.37 | 122.69 |
| 40 | L5 | 3639 | PSU | C6-N1-C2 | -2.50 | 120.37 | 122.69 |
| 19 | S2 | 801 | PSU | C6-N1-C2 | -2.50 | 120.37 | 122.69 |
| 40 | L5 | 4623 | OMG | O6-C6-C5 | 2.49 | 129.27 | 124.32 |
| 40 | L5 | 3785 | A2M | C4-C5-N7 | 2.49 | 111.97 | 109.34 |
| 40 | L5 | 4571 | A2M | C3'-C2'-C1' | -2.49 | 98.04 | 102.81 |
| 40 | L5 | 4590 | A2M | O4'-C1'-C2' | 2.49 | 110.85 | 106.61 |
| 40 | L5 | 4576 | PSU | C6-N1-C2 | -2.49 | 120.38 | 122.69 |
| 19 | S2 | 1046 | PSU | C6-N1-C2 | -2.49 | 120.38 | 122.69 |
| 19 | S2 | 509 | OMG | O6-C6-C5 | 2.49 | 129.25 | 124.32 |
| 40 | L5 | 4196 | OMG | O6-C6-C5 | 2.48 | 129.25 | 124.32 |
| 40 | L5 | 4361 | PSU | C6-N1-C2 | -2.48 | 120.39 | 122.69 |
| 40 | L5 | 3822 | PSU | O4'-C1'-C2' | 2.48 | 108.58 | 105.15 |
| 40 | L5 | 4552 | PSU | O2-C2-N1 | -2.48 | 120.23 | 122.79 |
| 40 | L5 | 3844 | PSU | O2-C2-N1 | -2.47 | 120.24 | 122.79 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 5001 | PSU | O2-C2-N1 | -2.47 | 120.24 | 122.79 |
| 40 | L5 | 1522 | OMG | O6-C6-C5 | 2.47 | 129.22 | 124.32 |
| 40 | L5 | 4457 | PSU | C6-N1-C2 | -2.47 | 120.40 | 122.69 |
| 19 | S2 | 1232 | PSU | C6-N1-C2 | -2.46 | 120.41 | 122.69 |
| 40 | L5 | 3825 | A2M | C3'-C2'-C1' | -2.46 | 98.10 | 102.81 |
| 40 | L5 | 4312 | PSU | C6-N1-C2 | -2.46 | 120.41 | 122.69 |
| 19 | S2 | 1177 | PSU | C6-N1-C2 | -2.46 | 120.41 | 122.69 |
| 40 | L5 | 1744 | PSU | C6-N1-C2 | -2.45 | 120.41 | 122.69 |
| 40 | L5 | 2861 | OMC | C1'-N1-C6 | -2.45 | 115.54 | 120.78 |
| 40 | L5 | 2632 | PSU | C6-N1-C2 | -2.45 | 120.42 | 122.69 |
| 40 | L5 | 3822 | PSU | C6-N1-C2 | -2.45 | 120.42 | 122.69 |
| 40 | L5 | 4403 | PSU | O2-C2-N1 | -2.44 | 120.27 | 122.79 |
| 40 | L5 | 1781 | PSU | C6-N1-C2 | -2.44 | 120.42 | 122.69 |
| 40 | L5 | 2787 | A2M | C4-C5-N7 | 2.44 | 111.92 | 109.34 |
| 40 | L5 | 3920 | PSU | C6-N1-C2 | -2.44 | 120.43 | 122.69 |
| 19 | S2 | 1174 | PSU | C6-N1-C2 | -2.43 | 120.43 | 122.69 |
| 40 | L5 | 4392 | OMG | O6-C6-C5 | 2.42 | 129.12 | 124.32 |
| 40 | L5 | 3627 | OMG | O6-C6-C5 | 2.42 | 129.12 | 124.32 |
| 40 | L5 | 4499 | OMG | O6-C6-C5 | 2.42 | 129.11 | 124.32 |
| 19 | S2 | 863 | PSU | C6-N1-C2 | -2.42 | 120.45 | 122.69 |
| 40 | L5 | 1326 | A2M | O4'-C1'-C2' | 2.42 | 110.72 | 106.61 |
| 19 | S2 | 649 | PSU | C6-N1-C2 | -2.41 | 120.45 | 122.69 |
| 40 | L5 | 2363 | A2M | C4-C5-N7 | 2.41 | 111.89 | 109.34 |
| 40 | L5 | 1534 | A2M | C2'-C1'-N9 | 2.41 | 117.92 | 112.56 |
| 19 | S2 | 484 | A2M | C4-C5-N7 | 2.41 | 111.89 | 109.34 |
| 40 | L5 | 4521 | PSU | C6-N1-C2 | -2.41 | 120.45 | 122.69 |
| 40 | L5 | 4493 | PSU | C6-C5-C4 | 2.41 | 119.80 | 118.17 |
| 19 | S2 | 27 | A2M | C4-C5-N7 | 2.41 | 111.88 | 109.34 |
| 19 | S2 | 644 | OMG | O6-C6-C5 | 2.40 | 129.09 | 124.32 |
| 40 | L5 | 2364 | OMG | O6-C6-C5 | 2.40 | 129.08 | 124.32 |
| 40 | L5 | 1792 | PSU | C6-N1-C2 | -2.40 | 120.46 | 122.69 |
| 40 | L5 | 1871 | A2M | C4-C5-N7 | 2.40 | 111.87 | 109.34 |
| 40 | L5 | 3884 | PSU | C6-N1-C2 | -2.39 | 120.47 | 122.69 |
| 42 | L8 | 55 | PSU | C6-N1-C2 | -2.39 | 120.47 | 122.69 |
| 40 | L5 | 4494 | OMG | O6-C6-C5 | 2.39 | 129.06 | 124.32 |
| 40 | L5 | 4973 | PSU | C6-N1-C2 | -2.39 | 120.48 | 122.69 |
| 40 | L5 | 1322 | 1MA | C5-C6-N1 | -2.38 | 110.53 | 113.95 |
| 40 | L5 | 4637 | OMG | O6-C6-C5 | 2.38 | 129.04 | 124.32 |
| 19 | S2 | 651 | PSU | C6-N1-C2 | -2.38 | 120.48 | 122.69 |
| 40 | L5 | 3744 | OMG | O6-C6-C5 | 2.38 | 129.03 | 124.32 |
| 19 | S2 | 1031 | A2M | C4-C5-N7 | 2.37 | 111.84 | 109.34 |
| 19 | S2 | 166 | A2M | O4'-C1'-C2' | 2.37 | 110.65 | 106.61 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 1862 | PSU | C6-N1-C2 | -2.37 | 120.49 | 122.69 |
| 40 | L5 | 3792 | OMG | O6-C6-C5 | 2.37 | 129.02 | 124.32 |
| 40 | L5 | 4370 | OMG | O6-C6-C5 | 2.37 | 129.02 | 124.32 |
| 19 | S2 | 166 | A2M | C4-C5-N7 | 2.37 | 111.84 | 109.34 |
| 40 | L5 | 1860 | PSU | C6-N1-C2 | -2.36 | 120.50 | 122.69 |
| 40 | L5 | 3637 | PSU | C6-N1-C2 | -2.36 | 120.50 | 122.69 |
| 40 | L5 | 1536 | PSU | C6-N1-C2 | -2.36 | 120.50 | 122.69 |
| 19 | S2 | 1045 | PSU | C6-N1-C2 | -2.36 | 120.50 | 122.69 |
| 40 | L5 | 4618 | OMG | O6-C6-C5 | 2.36 | 129.00 | 124.32 |
| 19 | S2 | 93 | PSU | C6-N1-C2 | -2.36 | 120.50 | 122.69 |
| 40 | L5 | 3830 | A2M | C4-C5-N7 | 2.36 | 111.83 | 109.34 |
| 40 | L5 | 4299 | PSU | C6-N1-C2 | -2.35 | 120.51 | 122.69 |
| 40 | L5 | 400 | A2M | C4-C5-N7 | 2.35 | 111.82 | 109.34 |
| 40 | L5 | 3718 | A2M | C4-C5-N7 | 2.35 | 111.82 | 109.34 |
| 19 | S2 | 109 | PSU | C6-N1-C2 | -2.35 | 120.51 | 122.69 |
| 40 | L5 | 2876 | OMG | O6-C6-C5 | 2.35 | 128.98 | 124.32 |
| 40 | L5 | 3867 | A2M | C4-C5-N7 | 2.35 | 111.82 | 109.34 |
| 40 | L5 | 1534 | A2M | C4-C5-N7 | 2.35 | 111.82 | 109.34 |
| 19 | S2 | 966 | PSU | C6-N1-C2 | -2.34 | 120.52 | 122.69 |
| 19 | S2 | 1081 | PSU | C6-N1-C2 | -2.34 | 120.52 | 122.69 |
| 40 | L5 | 4552 | PSU | C6-N1-C2 | -2.34 | 120.52 | 122.69 |
| 40 | L5 | 1323 | A2M | C4-C5-N7 | 2.34 | 111.81 | 109.34 |
| 19 | S2 | 1328 | OMG | O6-C6-C5 | 2.34 | 128.96 | 124.32 |
| 40 | L5 | 3899 | OMG | O6-C6-C5 | 2.34 | 128.95 | 124.32 |
| 40 | L5 | 4228 | OMG | O6-C6-C5 | 2.33 | 128.95 | 124.32 |
| 40 | L5 | 4293 | PSU | C6-N1-C2 | -2.33 | 120.53 | 122.69 |
| 40 | L5 | 4431 | PSU | C6-N1-C2 | -2.33 | 120.53 | 122.69 |
| 40 | L5 | 4552 | PSU | C6-C5-C4 | 2.33 | 119.75 | 118.17 |
| 19 | S2 | 406 | PSU | C6-N1-C2 | -2.33 | 120.53 | 122.69 |
| 42 | L8 | 75 | OMG | O6-C6-C5 | 2.33 | 128.94 | 124.32 |
| 19 | S2 | 1367 | PSU | C6-N1-C2 | -2.33 | 120.53 | 122.69 |
| 40 | L5 | 2815 | A2M | C4-C5-N7 | 2.33 | 111.80 | 109.34 |
| 40 | L5 | 5010 | PSU | C6-N1-C2 | -2.33 | 120.53 | 122.69 |
| 40 | L5 | 1524 | A2M | C4-C5-N7 | 2.33 | 111.79 | 109.34 |
| 40 | L5 | 1316 | OMG | O6-C6-C5 | 2.32 | 128.93 | 124.32 |
| 19 | S2 | 576 | A2M | C4-C5-N7 | 2.32 | 111.79 | 109.34 |
| 19 | S2 | 1383 | A2M | C4-C5-N7 | 2.32 | 111.78 | 109.34 |
| 40 | L5 | 1323 | A2M | C3'-C2'-C1' | -2.31 | 98.38 | 102.81 |
| 40 | L5 | 1744 | PSU | O4'-C1'-C2' | 2.31 | 108.35 | 105.15 |
| 40 | L5 | 4500 | PSU | C6-N1-C2 | -2.31 | 120.55 | 122.69 |
| 19 | S2 | 468 | A2M | C4-C5-N7 | 2.30 | 111.77 | 109.34 |
| 19 | S2 | 1031 | A2M | O4'-C1'-C2' | 2.30 | 110.53 | 106.61 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 19 | S2 | 601 | OMG | O6-C6-C5 | 2.30 | 128.88 | 124.32 |
| 40 | L5 | 1326 | A2M | C3'-C2'-C1' | -2.30 | 98.40 | 102.81 |
| 40 | L5 | 4442 | PSU | O4'-C1'-C2' | 2.30 | 108.33 | 105.15 |
| 42 | L8 | 69 | PSU | C6-N1-C2 | -2.30 | 120.56 | 122.69 |
| 40 | L5 | 4456 | OMC | C1'-N1-C2 | 2.30 | 123.51 | 118.44 |
| 40 | L5 | 3825 | A2M | O4'-C1'-C2' | 2.29 | 110.52 | 106.61 |
| 40 | L5 | 4673 | PSU | C6-N1-C2 | -2.29 | 120.56 | 122.69 |
| 40 | L5 | 1326 | A2M | C4-C5-N7 | 2.29 | 111.76 | 109.34 |
| 40 | L5 | 4403 | PSU | O4'-C1'-C2' | 2.29 | 108.32 | 105.15 |
| 19 | S2 | 866 | PSU | C6-N1-C2 | -2.29 | 120.57 | 122.69 |
| 40 | L5 | 4523 | A2M | O4'-C1'-C2' | 2.29 | 110.51 | 106.61 |
| 19 | S2 | 1232 | PSU | C6-C5-C4 | 2.29 | 119.72 | 118.17 |
| 19 | S2 | 686 | PSU | C6-N1-C2 | -2.28 | 120.57 | 122.69 |
| 40 | L5 | 3853 | PSU | C6-N1-C2 | -2.28 | 120.57 | 122.69 |
| 19 | S2 | 683 | OMG | O6-C6-C5 | 2.28 | 128.85 | 124.32 |
| 19 | S2 | 484 | A2M | O4'-C1'-C2' | 2.28 | 110.50 | 106.61 |
| 19 | S2 | 159 | A2M | C4-C5-N7 | 2.28 | 111.75 | 109.34 |
| 40 | L5 | 1625 | OMG | O6-C6-C5 | 2.28 | 128.84 | 124.32 |
| 19 | S2 | 428 | OMU | O2-C2-N1 | -2.28 | 119.83 | 122.80 |
| 40 | L5 | 3695 | PSU | C6-C5-C4 | 2.28 | 119.71 | 118.17 |
| 40 | L5 | 4523 | A2M | C4-C5-N7 | 2.28 | 111.75 | 109.34 |
| 19 | S2 | 867 | OMG | O6-C6-C5 | 2.28 | 128.84 | 124.32 |
| 19 | S2 | 627 | OMU | O2-C2-N1 | -2.28 | 119.83 | 122.80 |
| 40 | L5 | 2401 | A2M | C4-C5-N7 | 2.28 | 111.74 | 109.34 |
| 40 | L5 | 4296 | PSU | C6-N1-C2 | -2.27 | 120.58 | 122.69 |
| 40 | L5 | 4353 | PSU | C6-N1-C2 | -2.27 | 120.58 | 122.69 |
| 40 | L5 | 4530 | UR3 | C6-N1-C2 | -2.27 | 119.94 | 121.80 |
| 40 | L5 | 400 | A2M | O4'-C1'-C2' | 2.27 | 110.48 | 106.61 |
| 40 | L5 | 3825 | A2M | C4-C5-N7 | 2.27 | 111.73 | 109.34 |
| 19 | S2 | 436 | OMG | O6-C6-C5 | 2.27 | 128.81 | 124.32 |
| 40 | L5 | 1677 | PSU | O4'-C1'-C2' | 2.26 | 108.28 | 105.15 |
| 19 | S2 | 668 | A2M | C4-C5-N7 | 2.26 | 111.73 | 109.34 |
| 19 | S2 | 1326 | OMU | O2-C2-N1 | -2.26 | 119.85 | 122.80 |
| 19 | S2 | 814 | PSU | C6-N1-C2 | -2.26 | 120.59 | 122.69 |
| 40 | L5 | 4500 | PSU | C6-C5-C4 | 2.26 | 119.70 | 118.17 |
| 40 | L5 | 3851 | PSU | C6-N1-C2 | -2.26 | 120.59 | 122.69 |
| 19 | S2 | 1442 | OMU | C1'-N1-C2 | 2.26 | 121.65 | 117.59 |
| 40 | L5 | 4636 | PSU | C6-N1-C2 | -2.26 | 120.60 | 122.69 |
| 19 | S2 | 468 | A2M | O4'-C1'-C2' | 2.26 | 110.45 | 106.61 |
| 19 | S2 | 484 | A2M | O4'-C4'-C3' | 2.25 | 109.63 | 105.15 |
| 40 | L5 | 4571 | A2M | C4-C5-N7 | 2.25 | 111.72 | 109.34 |
| 19 | S2 | 99 | A2M | C4-C5-N7 | 2.25 | 111.71 | 109.34 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 1322 | 1MA | N1-C6-N6 | 2.25 | 125.35 | 119.71 |
| 40 | L5 | 3844 | PSU | C6-N1-C2 | -2.24 | 120.61 | 122.69 |
| 19 | S2 | 1081 | PSU | C6-C5-C4 | 2.24 | 119.69 | 118.17 |
| 40 | L5 | 4498 | OMU | O2-C2-N1 | -2.24 | 119.89 | 122.80 |
| 40 | L5 | 2424 | OMG | O6-C6-C5 | 2.23 | 128.75 | 124.32 |
| 40 | L5 | 4590 | A2M | C4-C5-N7 | 2.23 | 111.69 | 109.34 |
| 40 | L5 | 3695 | PSU | O2-C2-N1 | -2.23 | 120.49 | 122.79 |
| 40 | L5 | 5001 | PSU | C6-N1-C2 | -2.22 | 120.63 | 122.69 |
| 40 | L5 | 4493 | PSU | C6-N1-C2 | -2.22 | 120.63 | 122.69 |
| 19 | S2 | 1248 | B8N | C31-N3-C4 | 2.22 | 120.32 | 117.18 |
| 19 | S2 | 159 | A2M | C2'-C1'-N9 | 2.22 | 117.48 | 112.56 |
| 40 | L5 | 398 | A2M | C4-C5-N7 | 2.22 | 111.68 | 109.34 |
| 19 | S2 | 354 | OMU | O2-C2-N1 | -2.22 | 119.91 | 122.80 |
| 40 | L5 | 3785 | A2M | C3'-C2'-C1' | -2.21 | 98.58 | 102.81 |
| 40 | L5 | 3853 | PSU | C6-C5-C4 | 2.21 | 119.66 | 118.17 |
| 40 | L5 | 4457 | PSU | O4'-C1'-C2' | 2.21 | 108.20 | 105.15 |
| 19 | S2 | 1248 | B8N | O4'-C1'-C2' | 2.20 | 108.19 | 105.15 |
| 19 | S2 | 866 | PSU | O4'-C1'-C2' | 2.19 | 108.19 | 105.15 |
| 40 | L5 | 4530 | UR3 | C1'-N1-C2 | 2.19 | 120.63 | 117.04 |
| 40 | L5 | 3822 | PSU | C6-C5-C4 | 2.19 | 119.65 | 118.17 |
| 40 | L5 | 4972 | PSU | C6-C5-C4 | 2.19 | 119.65 | 118.17 |
| 40 | L5 | 4571 | A2M | O4'-C1'-C2' | 2.18 | 110.33 | 106.61 |
| 40 | L5 | 4403 | PSU | C6-N1-C2 | -2.18 | 120.67 | 122.69 |
| 40 | L5 | 1782 | PSU | C6-C5-C4 | 2.18 | 119.64 | 118.17 |
| 40 | L5 | 2787 | A2M | C4'-O4'-C1' | -2.17 | 107.93 | 109.92 |
| 19 | S2 | 406 | PSU | O4'-C1'-C2' | 2.17 | 108.15 | 105.15 |
| 40 | L5 | 3639 | PSU | C6-C5-C4 | 2.17 | 119.64 | 118.17 |
| 19 | S2 | 668 | A2M | O4'-C4'-C3' | 2.17 | 109.45 | 105.15 |
| 19 | S2 | 1248 | B8N | O4-C4-C5 | -2.16 | 118.83 | 122.58 |
| 40 | L5 | 1871 | A2M | O4'-C1'-C2' | 2.16 | 110.30 | 106.61 |
| 19 | S2 | 159 | A2M | O3'-C3'-C4' | -2.16 | 104.87 | 111.08 |
| 40 | L5 | 1677 | PSU | C6-N1-C2 | -2.16 | 120.69 | 122.69 |
| 40 | L5 | 4442 | PSU | C6-C5-C4 | 2.16 | 119.63 | 118.17 |
| 19 | S2 | 649 | PSU | C6-C5-C4 | 2.16 | 119.63 | 118.17 |
| 40 | L5 | 2815 | A2M | O4'-C4'-C3' | 2.16 | 109.43 | 105.15 |
| 40 | L5 | 3825 | A2M | C2'-C1'-N9 | 2.15 | 117.34 | 112.56 |
| 40 | L5 | 4227 | OMU | O2-C2-N1 | -2.14 | 120.01 | 122.80 |
| 40 | L5 | 3701 | OMC | C1'-N1-C2 | 2.13 | 123.15 | 118.44 |
| 19 | S2 | 27 | A2M | O4'-C1'-C2' | 2.13 | 110.24 | 106.61 |
| 19 | S2 | 121 | OMU | O2-C2-N1 | -2.13 | 120.03 | 122.80 |
| 40 | L5 | 2787 | A2M | O4'-C4'-C3' | 2.12 | 109.37 | 105.15 |
| 40 | L5 | 4431 | PSU | C6-C5-C4 | 2.12 | 119.61 | 118.17 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 40 | L5 | 4636 | PSU | C6-C5-C4 | 2.11 | 119.60 | 118.17 |
| 40 | L5 | 4353 | PSU | C6-C5-C4 | 2.11 | 119.60 | 118.17 |
| 40 | L5 | 3637 | PSU | C6-C5-C4 | 2.11 | 119.60 | 118.17 |
| 40 | L5 | 2363 | A2M | O4'-C1'-C2' | 2.10 | 110.19 | 106.61 |
| 40 | L5 | 3925 | OMU | O2-C2-N1 | -2.10 | 120.07 | 122.80 |
| 40 | L5 | 4576 | PSU | O4'-C1'-C2' | 2.10 | 108.05 | 105.15 |
| 19 | S2 | 966 | PSU | O4'-C1'-C2' | 2.09 | 108.05 | 105.15 |
| 40 | L5 | 1582 | PSU | C6-C5-C4 | 2.09 | 119.58 | 118.17 |
| 40 | L5 | 4296 | PSU | C6-C5-C4 | 2.09 | 119.58 | 118.17 |
| 40 | L5 | 3867 | A2M | O4'-C1'-C2' | 2.09 | 110.17 | 106.61 |
| 40 | L5 | 4636 | PSU | O4'-C1'-C2' | 2.08 | 108.02 | 105.15 |
| 40 | L5 | 3808 | OMC | C1'-N1-C6 | -2.07 | 116.35 | 120.78 |
| 19 | S2 | 1081 | PSU | O4'-C1'-C2' | 2.07 | 108.02 | 105.15 |
| 40 | L5 | 4521 | PSU | C6-C5-C4 | 2.07 | 119.57 | 118.17 |
| 40 | L5 | 2837 | OMU | O2-C2-N1 | -2.07 | 120.10 | 122.80 |
| 40 | L5 | 3695 | PSU | O4'-C1'-C2' | 2.07 | 108.01 | 105.15 |
| 40 | L5 | 1524 | A2M | C2'-C1'-N9 | 2.06 | 117.14 | 112.56 |
| 40 | L5 | 2815 | A2M | O4'-C1'-C2' | 2.06 | 110.12 | 106.61 |
| 42 | L8 | 69 | PSU | O4'-C1'-C2' | 2.06 | 108.00 | 105.15 |
| 40 | L5 | 3830 | A2M | O4'-C1'-C2' | 2.05 | 110.11 | 106.61 |
| 19 | S2 | 159 | A2M | O4'-C1'-C2' | 2.04 | 110.09 | 106.61 |
| 40 | L5 | 4293 | PSU | C6-C5-C4 | 2.04 | 119.55 | 118.17 |
| 40 | L5 | 2351 | OMC | C1'-N1-C2 | 2.04 | 122.94 | 118.44 |
| 40 | L5 | 2824 | OMC | C1'-N1-C2 | 2.03 | 122.93 | 118.44 |
| 40 | L5 | 3920 | PSU | O4'-C1'-C2' | 2.03 | 107.97 | 105.15 |
| 19 | S2 | 159 | A2M | C4'-O4'-C1' | -2.03 | 108.06 | 109.92 |
| 19 | S2 | 1832 | 6MZ | C9-N6-C6 | -2.03 | 120.97 | 122.85 |
| 40 | L5 | 4571 | A2M | C2'-C1'-N9 | 2.03 | 117.06 | 112.56 |
| 40 | L5 | 398 | A2M | O4'-C1'-C2' | 2.03 | 110.06 | 106.61 |
| 40 | L5 | 1534 | A2M | O3'-C3'-C4' | -2.01 | 105.30 | 111.08 |
| 40 | L5 | 4628 | PSU | O4'-C1'-C2' | 2.01 | 107.94 | 105.15 |
| 40 | L5 | 3920 | PSU | C6-C5-C4 | 2.01 | 119.53 | 118.17 |
| 40 | L5 | 1326 | A2M | O4'-C4'-C3' | 2.01 | 109.14 | 105.15 |
| 40 | L5 | 2632 | PSU | O4'-C1'-C2' | 2.01 | 107.93 | 105.15 |
| 19 | S2 | 1367 | PSU | C6-C5-C4 | 2.00 | 119.53 | 118.17 |
| 19 | S2 | 1850 | MA6 | C2'-C3'-C4' | 2.00 | 106.48 | 102.61 |

There are no chirality outliers.

All (163) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 42 | L8 | 75 | OMG | C1'-C2'-O2'-CM2 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 19 | S2 | 27 | A2M | C1'-C2'-O2'-CM' |
| 19 | S2 | 159 | A2M | C1'-C2'-O2'-CM' |
| 19 | S2 | 354 | OMU | C1'-C2'-O2'-CM2 |
| 19 | S2 | 468 | A2M | C1'-C2'-O2'-CM' |
| 19 | S2 | 484 | A2M | C1'-C2'-O2'-CM' |
| 19 | S2 | 576 | A2M | C1'-C2'-O2'-CM' |
| 19 | S2 | 601 | OMG | C1'-C2'-O2'-CM2 |
| 19 | S2 | 644 | OMG | O4'-C4'-C5'-O5' |
| 19 | S2 | 644 | OMG | C1'-C2'-O2'-CM2 |
| 19 | S2 | 668 | A2M | C1'-C2'-O2'-CM' |
| 19 | S2 | 683 | OMG | O4'-C4'-C5'-O5' |
| 19 | S2 | 683 | OMG | C3'-C4'-C5'-O5' |
| 19 | S2 | 863 | PSU | O4'-C4'-C5'-O5' |
| 19 | S2 | 1031 | A2M | C1'-C2'-O2'-CM' |
| 19 | S2 | 1272 | OMC | C3'-C4'-C5'-O5' |
| 19 | S2 | 1272 | OMC | O4'-C4'-C5'-O5' |
| 19 | S2 | 1288 | OMU | C3'-C4'-C5'-O5' |
| 19 | S2 | 1288 | OMU | O4'-C4'-C5'-O5' |
| 19 | S2 | 1328 | OMG | C1'-C2'-O2'-CM2 |
| 19 | S2 | 1337 | 4AC | N3-C4-N4-C7 |
| 19 | S2 | 1383 | A2M | C1'-C2'-O2'-CM' |
| 19 | S2 | 1442 | OMU | C1'-C2'-O2'-CM2 |
| 19 | S2 | 1442 | OMU | O4'-C4'-C5'-O5' |
| 19 | S2 | 1832 | 6MZ | C5-C6-N6-C9 |
| 19 | S2 | 1832 | 6MZ | N1-C6-N6-C9 |
| 19 | S2 | 1850 | MA6 | C5-C6-N6-C10 |
| 40 | L5 | 1316 | OMG | C1'-C2'-O2'-CM2 |
| 40 | L5 | 1323 | A2M | C1'-C2'-O2'-CM' |
| 40 | L5 | 1326 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 1326 | A2M | C3'-C4'-C5'-O5' |
| 40 | L5 | 1326 | A2M | C1'-C2'-O2'-CM' |
| 40 | L5 | 1340 | OMC | C1'-C2'-O2'-CM2 |
| 40 | L5 | 1524 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 1524 | A2M | C1'-C2'-O2'-CM' |
| 40 | L5 | 1536 | PSU | C3'-C4'-C5'-O5' |
| 40 | L5 | 1536 | PSU | O4'-C4'-C5'-O5' |
| 40 | L5 | 1625 | OMG | O4'-C4'-C5'-O5' |
| 40 | L5 | 2351 | OMC | C1'-C2'-O2'-CM2 |
| 40 | L5 | 2364 | OMG | C1'-C2'-O2'-CM2 |
| 40 | L5 | 2401 | A2M | C1'-C2'-O2'-CM' |
| 40 | L5 | 2422 | OMC | C1'-C2'-O2'-CM2 |
| 40 | L5 | 2787 | A2M | C1'-C2'-O2'-CM' |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 40 | L5 | 2861 | OMC | C1'-C2'-O2'-CM2 |
| 40 | L5 | 3701 | OMC | O4'-C4'-C5'-O5' |
| 40 | L5 | 3718 | A2M | C1'-C2'-O2'-CM' |
| 40 | L5 | 3744 | OMG | C1'-C2'-O2'-CM2 |
| 40 | L5 | 3792 | OMG | O4'-C4'-C5'-O5' |
| 40 | L5 | 3822 | PSU | O4'-C4'-C5'-O5' |
| 40 | L5 | 3825 | A2M | C1'-C2'-O2'-CM' |
| 40 | L5 | 3830 | A2M | C1'-C2'-O2'-CM' |
| 40 | L5 | 3867 | A2M | C1'-C2'-O2'-CM' |
| 40 | L5 | 4220 | 6MZ | O4'-C4'-C5'-O5' |
| 40 | L5 | 4447 | 5MC | C2'-C1'-N1-C2 |
| 40 | L5 | 4447 | 5MC | C2'-C1'-N1-C6 |
| 40 | L5 | 4500 | PSU | O4'-C4'-C5'-O5' |
| 40 | L5 | 4590 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 4590 | A2M | C1'-C2'-O2'-CM' |
| 40 | L5 | 4620 | OMU | C1'-C2'-O2'-CM2 |
| 40 | L5 | 4636 | PSU | C2'-C1'-C5-C4 |
| 40 | L5 | 4637 | OMG | C1'-C2'-O2'-CM2 |
| 19 | S2 | 99 | A2M | O4'-C4'-C5'-O5' |
| 19 | S2 | 576 | A2M | O4'-C4'-C5'-O5' |
| 19 | S2 | 576 | A2M | C3'-C4'-C5'-O5' |
| 19 | S2 | 799 | OMU | C3'-C4'-C5'-O5' |
| 19 | S2 | 799 | OMU | O4'-C4'-C5'-O5' |
| 19 | S2 | 801 | PSU | C3'-C4'-C5'-O5' |
| 19 | S2 | 863 | PSU | C3'-C4'-C5'-O5' |
| 40 | L5 | 1524 | A2M | C3'-C4'-C5'-O5' |
| 40 | L5 | 3822 | PSU | C3'-C4'-C5'-O5' |
| 40 | L5 | 4500 | PSU | C3'-C4'-C5'-O5' |
| 40 | L5 | 4590 | A2M | C3'-C4'-C5'-O5' |
| 40 | L5 | 4618 | OMG | C3'-C4'-C5'-O5' |
| 19 | S2 | 172 | OMU | O4'-C4'-C5'-O5' |
| 19 | S2 | 1045 | PSU | C3'-C4'-C5'-O5' |
| 19 | S2 | 1045 | PSU | O4'-C4'-C5'-O5' |
| 19 | S2 | 1248 | B8N | O4'-C4'-C5'-O5' |
| 19 | S2 | 1442 | OMU | C3'-C4'-C5'-O5' |
| 19 | S2 | 1639 | G7M | O4'-C4'-C5'-O5' |
| 19 | S2 | 1639 | G7M | C3'-C4'-C5'-O5' |
| 40 | L5 | 2401 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 2787 | A2M | C3'-C4'-C5'-O5' |
| 40 | L5 | 3701 | OMC | C3'-C4'-C5'-O5' |
| 40 | L5 | 4523 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 4618 | OMG | O4'-C4'-C5'-O5' |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 40 | L5 | 4637 | OMG | O4'-C4'-C5'-O5' |
| 40 | L5 | 4637 | OMG | C3'-C4'-C5'-O5' |
| 19 | S2 | 644 | OMG | C3'-C4'-C5'-O5' |
| 40 | L5 | 1323 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 1625 | OMG | C3'-C4'-C5'-O5' |
| 40 | L5 | 3792 | OMG | C3'-C4'-C5'-O5' |
| 40 | L5 | 4220 | 6MZ | C3'-C4'-C5'-O5' |
| 19 | S2 | 99 | A2M | C3'-C4'-C5'-O5' |
| 19 | S2 | 668 | A2M | O4'-C4'-C5'-O5' |
| 19 | S2 | 668 | A2M | C3'-C4'-C5'-O5' |
| 40 | L5 | 2401 | A2M | C3'-C4'-C5'-O5' |
| 19 | S2 | 1248 | B8N | N34-C33-C34-O36 |
| 19 | S2 | 801 | PSU | O4'-C4'-C5'-O5' |
| 19 | S2 | 867 | OMG | C3'-C4'-C5'-O5' |
| 19 | S2 | 1383 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 2422 | OMC | O4'-C4'-C5'-O5' |
| 19 | S2 | 1851 | MA6 | C3'-C4'-C5'-O5' |
| 40 | L5 | 3899 | OMG | C3'-C4'-C5'-O5' |
| 40 | L5 | 4523 | A2M | C3'-C4'-C5'-O5' |
| 40 | L5 | 3701 | OMC | O4'-C1'-N1-C2 |
| 40 | L5 | 4590 | A2M | C4'-C5'-O5'-P |
| 19 | S2 | 172 | OMU | C3'-C4'-C5'-O5' |
| 19 | S2 | 1248 | B8N | C3'-C4'-C5'-O5' |
| 40 | L5 | 1323 | A2M | C3'-C4'-C5'-O5' |
| 40 | L5 | 3701 | OMC | O4'-C1'-N1-C6 |
| 19 | S2 | 1490 | OMG | C1'-C2'-O2'-CM2 |
| 40 | L5 | 2424 | OMG | C1'-C2'-O2'-CM2 |
| 19 | S2 | 1383 | A2M | C3'-C4'-C5'-O5' |
| 40 | L5 | 2422 | OMC | C3'-C4'-C5'-O5' |
| 40 | L5 | 4447 | 5MC | O4'-C1'-N1-C6 |
| 19 | S2 | 1703 | OMC | O4'-C4'-C5'-O5' |
| 19 | S2 | 428 | OMU | C2'-C1'-N1-C6 |
| 19 | S2 | 1851 | MA6 | C5-C6-N6-C9 |
| 19 | S2 | 644 | OMG | C4'-C5'-O5'-P |
| 40 | L5 | 1534 | A2M | C4'-C5'-O5'-P |
| 40 | L5 | 3818 | UY1 | C4'-C5'-O5'-P |
| 40 | L5 | 3887 | OMC | C4'-C5'-O5'-P |
| 40 | L5 | 4500 | PSU | C4'-C5'-O5'-P |
| 19 | S2 | 406 | PSU | O4'-C1'-C5-C4 |
| 19 | S2 | 1248 | B8N | O4'-C1'-C5-C4 |
| 40 | L5 | 1677 | PSU | O4'-C1'-C5-C4 |
| 40 | L5 | 3822 | PSU | O4'-C1'-C5-C4 |

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| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 40 | L5 | 4521 | PSU | O4'-C1'-C5-C4 |
| 40 | L5 | 4636 | PSU | O4'-C1'-C5-C4 |
| 40 | L5 | 3792 | OMG | C4'-C5'-O5'-P |
| 19 | S2 | 867 | OMG | O4'-C4'-C5'-O5' |
| 40 | L5 | 2787 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 4447 | 5MC | O4'-C1'-N1-C2 |
| 19 | S2 | 801 | PSU | C4'-C5'-O5'-P |
| 19 | S2 | 867 | OMG | C4'-C5'-O5'-P |
| 40 | L5 | 3844 | PSU | C4'-C5'-O5'-P |
| 40 | L5 | 2876 | OMG | C3'-C2'-O2'-CM2 |
| 40 | L5 | 3782 | 5MC | O4'-C4'-C5'-O5' |
| 40 | L5 | 3899 | OMG | O4'-C4'-C5'-O5' |
| 19 | S2 | 1490 | OMG | C4'-C5'-O5'-P |
| 19 | S2 | 428 | OMU | O4'-C1'-N1-C6 |
| 19 | S2 | 462 | OMC | C1'-C2'-O2'-CM2 |
| 40 | L5 | 3925 | OMU | C1'-C2'-O2'-CM2 |
| 40 | L5 | 398 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 4296 | PSU | C3'-C4'-C5'-O5' |
| 19 | S2 | 1248 | B8N | O4'-C1'-C5-C6 |
| 40 | L5 | 3822 | PSU | O4'-C1'-C5-C6 |
| 19 | S2 | 627 | OMU | O4'-C1'-N1-C6 |
| 19 | S2 | 627 | OMU | C2'-C1'-N1-C6 |
| 19 | S2 | 576 | A2M | C4'-C5'-O5'-P |
| 40 | L5 | 2364 | OMG | O4'-C4'-C5'-O5' |
| 19 | S2 | 428 | OMU | O4'-C1'-N1-C2 |
| 40 | L5 | 2861 | OMC | C2'-C1'-N1-C2 |
| 19 | S2 | 1248 | B8N | N3-C31-C32-C33 |
| 19 | S2 | 517 | OMC | C3'-C4'-C5'-O5' |
| 19 | S2 | 1081 | PSU | C4'-C5'-O5'-P |
| 40 | L5 | 1625 | OMG | C4'-C5'-O5'-P |
| 40 | L5 | 3899 | OMG | C4'-C5'-O5'-P |
| 19 | S2 | 1288 | OMU | C2'-C1'-N1-C2 |
| 19 | S2 | 1248 | B8N | N34-C33-C34-O35 |
| 40 | L5 | 2861 | OMC | O4'-C4'-C5'-O5' |
| 40 | L5 | 3785 | A2M | O4'-C4'-C5'-O5' |
| 40 | L5 | 4296 | PSU | O4'-C4'-C5'-O5' |

There are no ring outliers.

94 monomers are involved in 164 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 19 | S2 | 1850 | MA6 | 4 | 0 |

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| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 19 | S2 | 576 | A2M | 3 | 0 |
| 40 | L5 | 3822 | PSU | 1 | 0 |
| 40 | L5 | 4220 | 6MZ | 1 | 0 |
| 40 | L5 | 3744 | OMG | 1 | 0 |
| 40 | L5 | 4196 | OMG | 1 | 0 |
| 40 | L5 | 2364 | OMG | 1 | 0 |
| 19 | S2 | 1391 | OMC | 1 | 0 |
| 19 | S2 | 601 | OMG | 3 | 0 |
| 40 | L5 | 4579 | PSU | 2 | 0 |
| 19 | S2 | 27 | A2M | 3 | 0 |
| 19 | S2 | 866 | PSU | 2 | 0 |
| 40 | L5 | 400 | A2M | 1 | 0 |
| 40 | L5 | 3825 | A2M | 4 | 0 |
| 19 | S2 | 649 | PSU | 1 | 0 |
| 19 | S2 | 159 | A2M | 5 | 0 |
| 19 | S2 | 428 | OMU | 1 | 0 |
| 40 | L5 | 1340 | OMC | 2 | 0 |
| 40 | L5 | 1536 | PSU | 1 | 0 |
| 40 | L5 | 4576 | PSU | 1 | 0 |
| 19 | S2 | 1337 | 4AC | 3 | 0 |
| 40 | L5 | 3920 | PSU | 3 | 0 |
| 40 | L5 | 4457 | PSU | 2 | 0 |
| 19 | S2 | 1328 | OMG | 1 | 0 |
| 40 | L5 | 4392 | OMG | 2 | 0 |
| 40 | L5 | 4571 | A2M | 3 | 0 |
| 40 | L5 | 4590 | A2M | 1 | 0 |
| 40 | L5 | 4637 | OMG | 3 | 0 |
| 19 | S2 | 484 | A2M | 3 | 0 |
| 19 | S2 | 172 | OMU | 1 | 0 |
| 40 | L5 | 1323 | A2M | 2 | 0 |
| 19 | S2 | 644 | OMG | 2 | 0 |
| 19 | S2 | 1851 | MA6 | 2 | 0 |
| 40 | L5 | 4471 | PSU | 1 | 0 |
| 19 | S2 | 436 | OMG | 1 | 0 |
| 40 | L5 | 4620 | OMU | 3 | 0 |
| 40 | L5 | 3830 | A2M | 1 | 0 |
| 40 | L5 | 4442 | PSU | 1 | 0 |
| 19 | S2 | 668 | A2M | 3 | 0 |
| 40 | L5 | 2401 | A2M | 1 | 0 |
| 19 | S2 | 1490 | OMG | 2 | 0 |
| 40 | L5 | 2363 | A2M | 1 | 0 |
| 19 | S2 | 116 | OMU | 1 | 0 |

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| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 40 | L5 | 1677 | PSU | 1 | 0 |
| 19 | S2 | 462 | OMC | 1 | 0 |
| 19 | S2 | 1174 | PSU | 2 | 0 |
| 19 | S2 | 509 | OMG | 3 | 0 |
| 40 | L5 | 2815 | A2M | 1 | 0 |
| 42 | L8 | 69 | PSU | 1 | 0 |
| 40 | L5 | 3785 | A2M | 1 | 0 |
| 40 | L5 | 1871 | A2M | 1 | 0 |
| 40 | L5 | 2804 | OMC | 2 | 0 |
| 19 | S2 | 517 | OMC | 1 | 0 |
| 40 | L5 | 3818 | UY1 | 2 | 0 |
| 19 | S2 | 406 | PSU | 1 | 0 |
| 40 | L5 | 5010 | PSU | 2 | 0 |
| 42 | L8 | 75 | OMG | 2 | 0 |
| 19 | S2 | 1031 | A2M | 2 | 0 |
| 40 | L5 | 1326 | A2M | 2 | 0 |
| 19 | S2 | 121 | OMU | 2 | 0 |
| 40 | L5 | 4523 | A2M | 2 | 0 |
| 40 | L5 | 4456 | OMC | 1 | 0 |
| 40 | L5 | 4689 | PSU | 1 | 0 |
| 40 | L5 | 4532 | PSU | 2 | 0 |
| 40 | L5 | 398 | A2M | 1 | 0 |
| 19 | S2 | 1004 | PSU | 2 | 0 |
| 19 | S2 | 867 | OMG | 3 | 0 |
| 40 | L5 | 1316 | OMG | 1 | 0 |
| 40 | L5 | 3718 | A2M | 4 | 0 |
| 40 | L5 | 4623 | OMG | 2 | 0 |
| 19 | S2 | 1383 | A2M | 2 | 0 |
| 19 | S2 | 1842 | 4AC | 3 | 0 |
| 19 | S2 | 166 | A2M | 1 | 0 |
| 40 | L5 | 4353 | PSU | 1 | 0 |
| 19 | S2 | 863 | PSU | 1 | 0 |
| 40 | L5 | 1744 | PSU | 1 | 0 |
| 40 | L5 | 2876 | OMG | 1 | 0 |
| 40 | L5 | 2422 | OMC | 2 | 0 |
| 40 | L5 | 4493 | PSU | 2 | 0 |
| 19 | S2 | 681 | PSU | 1 | 0 |
| 19 | S2 | 1244 | PSU | 1 | 0 |
| 19 | S2 | 1232 | PSU | 1 | 0 |
| 40 | L5 | 4403 | PSU | 1 | 0 |
| 40 | L5 | 2787 | A2M | 2 | 0 |
| 19 | S2 | 109 | PSU | 1 | 0 |

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| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 40 | L5 | 2424 | OMG | 1 | 0 |
| 19 | S2 | 354 | OMU | 3 | 0 |
| 40 | L5 | 3867 | A2M | 4 | 0 |
| 40 | L5 | 3841 | OMC | 1 | 0 |
| 40 | L5 | 3884 | PSU | 1 | 0 |
| 40 | L5 | 1683 | PSU | 2 | 0 |
| 19 | S2 | 468 | A2M | 3 | 0 |
| 40 | L5 | 2351 | OMC | 3 | 0 |
| 40 | L5 | 4494 | OMG | 2 | 0 |

## 5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry (i)

Of 244 ligands modelled in this entry, 225 are monoatomic - leaving 19 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\| > 2$ | Counts | RMSZ | $\#\|Z\| > 2$ |
| 88 | SPD | L5 | 5282 | - | 9,9,9 | 0.33 | 0 | 8,8,8 | 0.82 | 0 |
| 87 | SPM | L5 | 5287 | - | 13,13,13 | 0.35 | 0 | 12,12,12 | 0.95 | 0 |
| 88 | SPD | L5 | 5289 | - | 9,9,9 | 0.33 | 0 | 8,8,8 | 0.83 | 0 |
| 87 | SPM | L5 | 5290 | - | 13,13,13 | 0.35 | 0 | 12,12,12 | 0.82 | 0 |
| 89 | 3HE | L5 | 5293 | 40 | 21,21,21 | 0.49 | 0 | 23,30,30 | 1.10 | 2 (8%) |
| 87 | SPM | L5 | 5266 | - | 13,13,13 | 0.35 | 0 | 12,12,12 | 0.92 | 0 |
| 90 | HMT | L5 | 5294 | - | 41,43,43 | 0.73 | 1 (2%) | 43,66,66 | 0.64 | 0 |
| 88 | SPD | L5 | 5288 | - | 9,9,9 | 0.32 | 0 | 8,8,8 | 0.89 | 0 |
| 87 | SPM | L5 | 5292 | - | 13,13,13 | 0.35 | 0 | 12,12,12 | 0.89 | 0 |
| 88 | SPD | L5 | 5285 | - | 9,9,9 | 0.33 | 0 | 8,8,8 | 0.80 | 0 |
| 88 | SPD | L5 | 5283 | - | 9,9,9 | 0.32 | 0 | 8,8,8 | 0.86 | 0 |
| 87 | SPM | L5 | 5263 | - | 13,13,13 | 0.35 | 0 | 12,12,12 | 0.95 | 0 |
| 88 | SPD | L5 | 5286 | - | 9,9,9 | 0.32 | 0 | 8,8,8 | 0.88 | 0 |
| 88 | SPD | L5 | 5291 | - | 9,9,9 | 0.32 | 0 | 8,8,8 | 0.81 | 0 |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Counts | RMSZ | $\#\|Z\|>2$ | Counts | RMSZ | $\#\|Z\|>2$ |
| 87 | SPM | L5 | 5258 | - | 13,13,13 | 0.35 | 0 | 12,12,12 | 1.02 | 0 |
| 88 | SPD | L5 | 5284 | - | 9,9,9 | 0.32 | 0 | 8,8,8 | 0.83 | 0 |
| 88 | SPD | L8 | 203 | - | 9,9,9 | 0.33 | 0 | 8,8,8 | 0.84 | 0 |
| 88 | SPD | L5 | 5260 | - | 9,9,9 | 0.32 | 0 | 8,8,8 | 0.90 | 0 |
| 87 | SPM | L5 | 5262 | - | 13,13,13 | 0.35 | 0 | 12,12,12 | 1.01 | 0 |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 88 | SPD | L5 | 5282 | - | - | 1/7/7/7 | - |
| 87 | SPM | L5 | 5287 | - | - | 2/11/11/11 | - |
| 88 | SPD | L5 | 5289 | - | - | 2/7/7/7 | - |
| 87 | SPM | L5 | 5290 | - | - | 3/11/11/11 | - |
| 89 | 3HE | L5 | 5293 | 40 | - | 6/8/36/36 | 0/2/2/2 |
| 87 | SPM | L5 | 5266 | - | - | 3/11/11/11 | - |
| 90 | HMT | L5 | 5294 | - | - | 0/27/74/74 | 0/5/5/5 |
| 88 | SPD | L5 | 5288 | - | - | 1/7/7/7 | - |
| 87 | SPM | L5 | 5292 | - | - | 2/11/11/11 | - |
| 88 | SPD | L5 | 5285 | - | - | 2/7/7/7 | - |
| 88 | SPD | L5 | 5283 | - | - | 1/7/7/7 | - |
| 87 | SPM | L5 | 5263 | - | - | 2/11/11/11 | - |
| 88 | SPD | L5 | 5286 | - | - | 2/7/7/7 | - |
| 88 | SPD | L5 | 5291 | - | - | 2/7/7/7 | - |
| 87 | SPM | L5 | 5258 | - | - | 2/11/11/11 | - |
| 88 | SPD | L5 | 5284 | - | - | 2/7/7/7 | - |
| 88 | SPD | L8 | 203 | - | - | 1/7/7/7 | - |
| 88 | SPD | L5 | 5260 | - | - | 1/7/7/7 | - |
| 87 | SPM | L5 | 5262 | - | - | 2/11/11/11 | - |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 90 | L5 | 5294 | HMT | C20-C19 | -3.18 | 1.49 | 1.53 |

All (2) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 89 | L5 | 5293 | 3HE | C2-C3-C4 | 2.33 | 114.30 | 109.66 |
| 89 | L5 | 5293 | 3HE | C6-C5-C4 | 2.24 | 111.99 | 108.29 |

There are no chirality outliers.

All (37) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 89 | L5 | 5293 | 3HE | C4-C5-C7-C8 |
| 89 | L5 | 5293 | 3HE | C6-C5-C7-C8 |
| 87 | L5 | 5266 | SPM | C2-C3-C4-N5 |
| 87 | L5 | 5290 | SPM | N10-C11-C12-C13 |
| 87 | L5 | 5287 | SPM | C12-C11-N10-C9 |
| 88 | L8 | 203 | SPD | C4-C5-N6-C7 |
| 88 | L5 | 5284 | SPD | C2-C3-C4-C5 |
| 88 | L5 | 5289 | SPD | C4-C5-N6-C7 |
| 89 | L5 | 5293 | 3HE | C4-C5-C7-O3 |
| 88 | L5 | 5285 | SPD | C2-C3-C4-C5 |
| 87 | L5 | 5292 | SPM | C6-C7-C8-C9 |
| 88 | L5 | 5286 | SPD | C8-C7-N6-C5 |
| 87 | L5 | 5263 | SPM | C2-C3-C4-N5 |
| 87 | L5 | 5287 | SPM | N1-C2-C3-C4 |
| 88 | L5 | 5286 | SPD | C4-C5-N6-C7 |
| 89 | L5 | 5293 | 3HE | C7-C8-C9-C10 |
| 87 | L5 | 5266 | SPM | C6-C7-C8-C9 |
| 87 | L5 | 5258 | SPM | C6-C7-C8-C9 |
| 87 | L5 | 5290 | SPM | C8-C9-N10-C11 |
| 88 | L5 | 5282 | SPD | C2-C3-C4-C5 |
| 88 | L5 | 5285 | SPD | C3-C4-C5-N6 |
| 88 | L5 | 5289 | SPD | C3-C4-C5-N6 |
| 87 | L5 | 5262 | SPM | C7-C6-N5-C4 |
| 89 | L5 | 5293 | 3HE | C7-C8-C9-C13 |
| 87 | L5 | 5263 | SPM | N1-C2-C3-C4 |
| 88 | L5 | 5291 | SPD | C8-C7-N6-C5 |
| 87 | L5 | 5258 | SPM | C3-C4-N5-C6 |
| 88 | L5 | 5288 | SPD | C2-C3-C4-C5 |
| 88 | L5 | 5283 | SPD | C3-C4-C5-N6 |
| 87 | L5 | 5266 | SPM | C3-C4-N5-C6 |
| 88 | L5 | 5260 | SPD | N6-C7-C8-C9 |
| 87 | L5 | 5292 | SPM | C7-C6-N5-C4 |
| 88 | L5 | 5284 | SPD | N1-C2-C3-C4 |
| 89 | L5 | 5293 | 3HE | C6-C5-C7-O3 |
| 87 | L5 | 5262 | SPM | C2-C3-C4-N5 |
| 88 | L5 | 5291 | SPD | C4-C5-N6-C7 |

*Continued on next page...*

*Continued from previous page...*

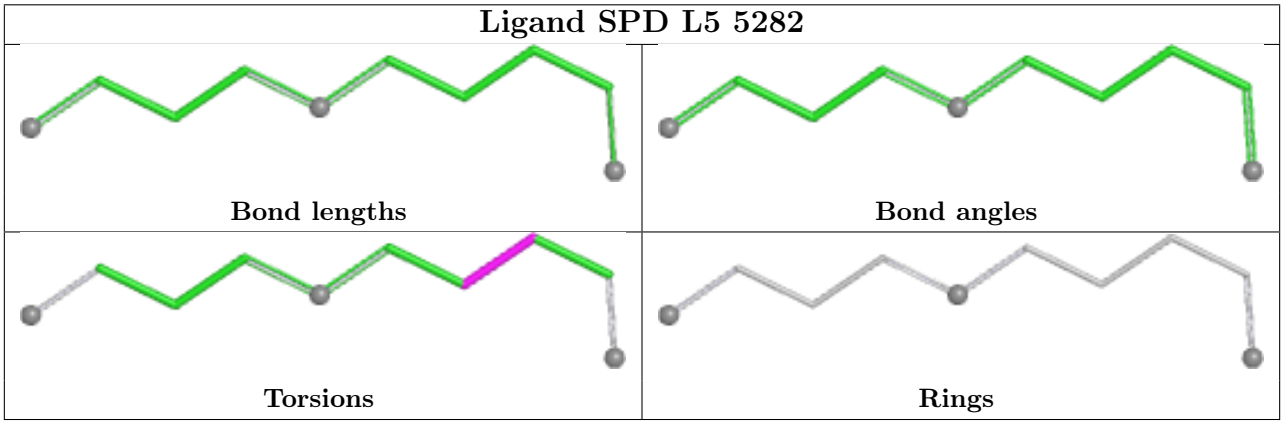
| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 87 | L5 | 5290 | SPM | C6-C7-C8-C9 |

There are no ring outliers.

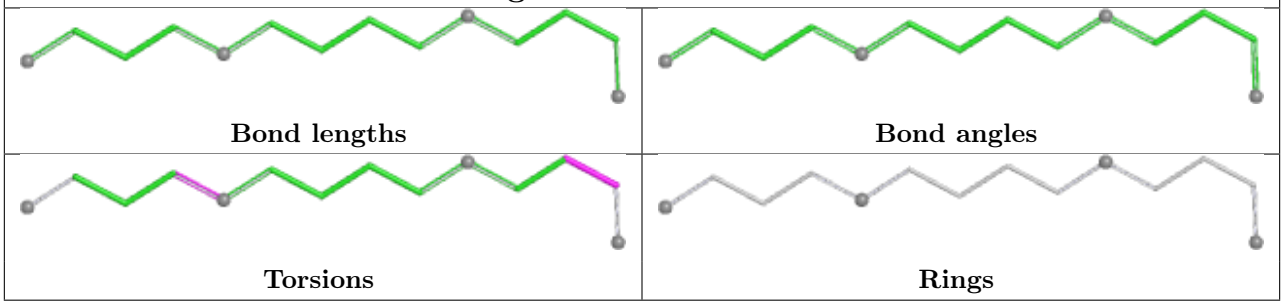
7 monomers are involved in 13 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 90 | L5 | 5294 | HMT | 1 | 0 |
| 87 | L5 | 5292 | SPM | 4 | 0 |
| 87 | L5 | 5263 | SPM | 1 | 0 |
| 88 | L5 | 5286 | SPD | 1 | 0 |
| 88 | L5 | 5291 | SPD | 2 | 0 |
| 88 | L8 | 203 | SPD | 2 | 0 |
| 87 | L5 | 5262 | SPM | 2 | 0 |

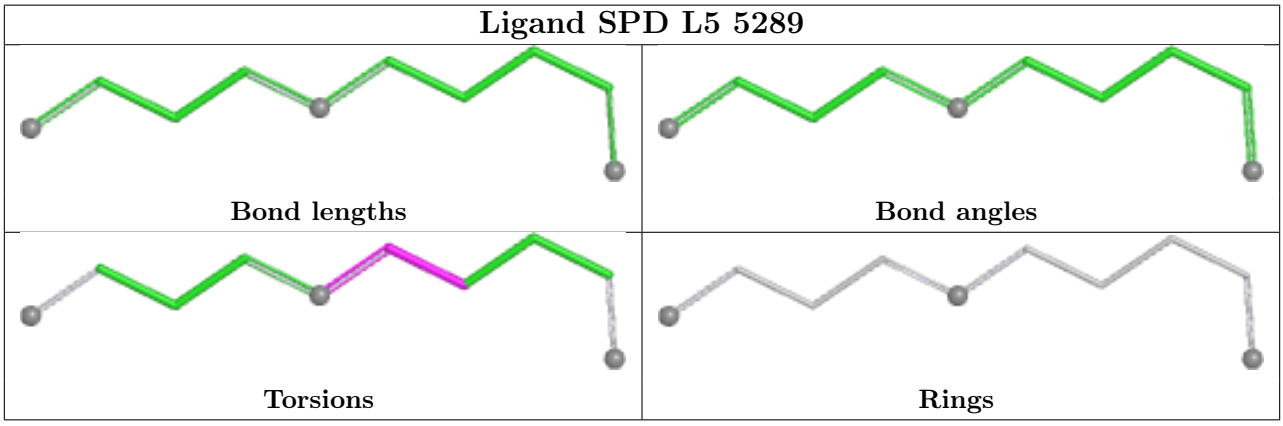
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



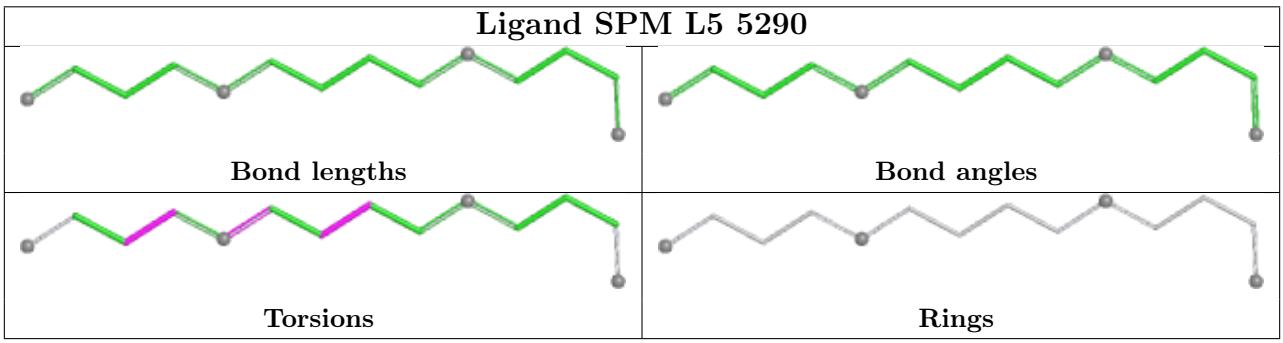
**Ligand SPM L5 5287**



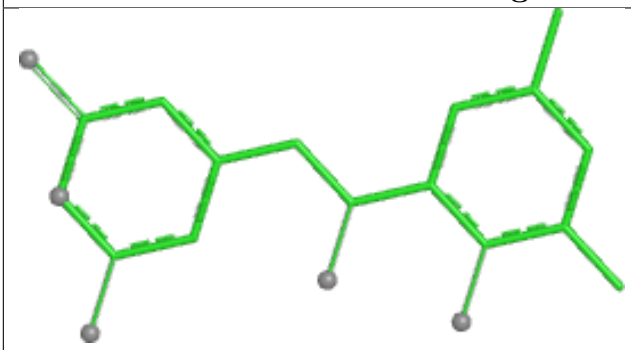

**Ligand SPD L5 5289**



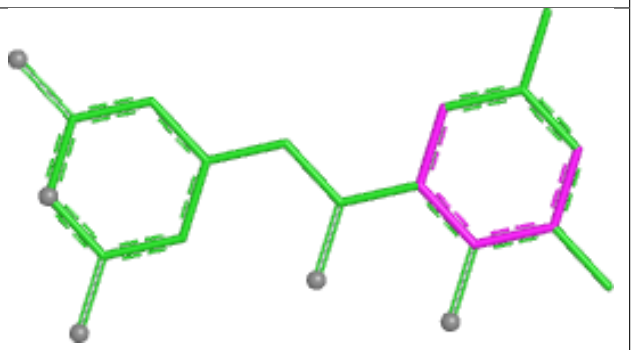

**Ligand SPM L5 5290**



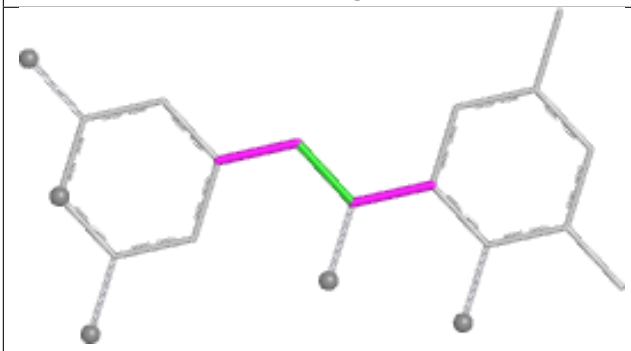
**Ligand 3HE L5 5293**



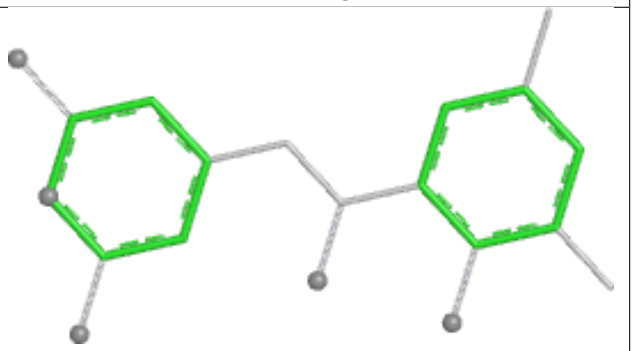
Bond lengths



Bond angles

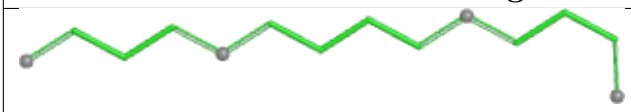


Torsions

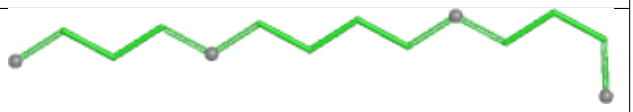


Rings

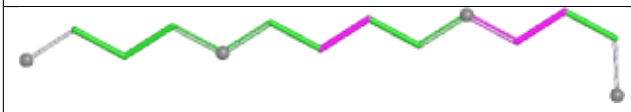
**Ligand SPM L5 5266**



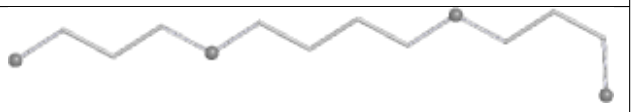
Bond lengths



Bond angles

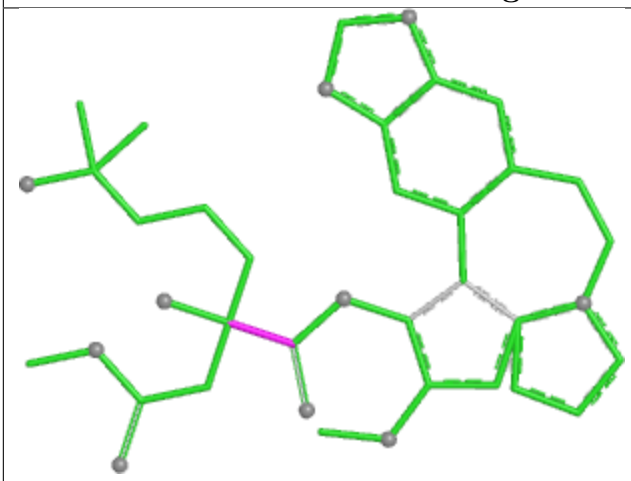


Torsions

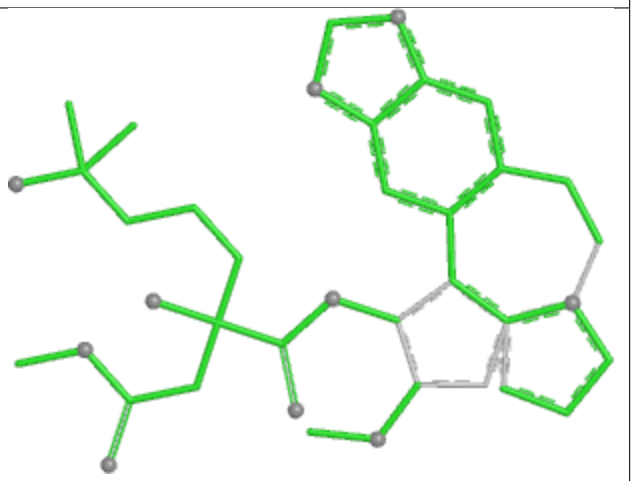


Rings

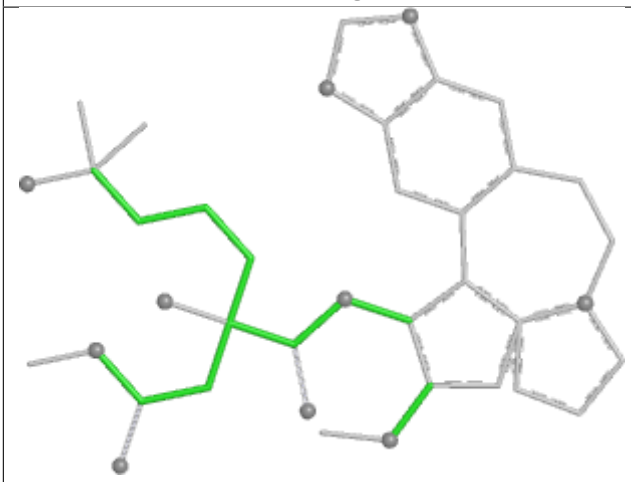
## Ligand HMT L5 5294



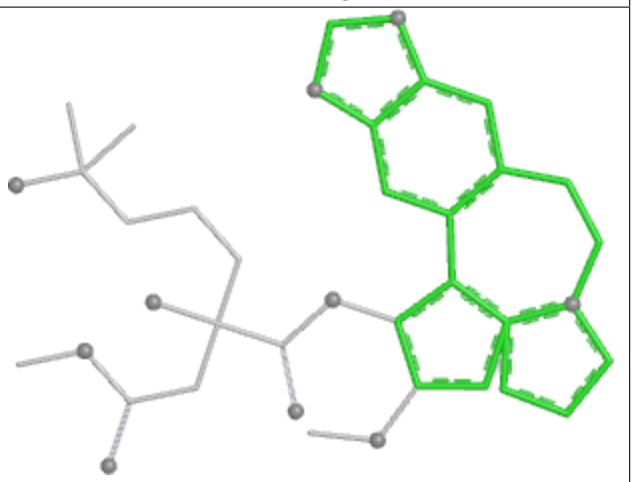
Bond lengths



Bond angles

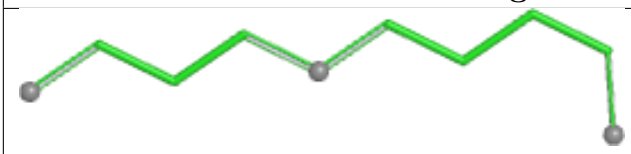


Torsions

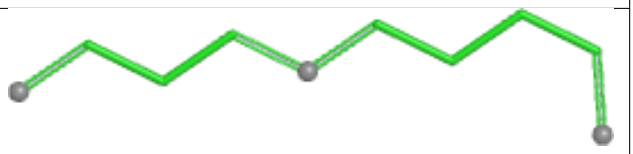


Rings

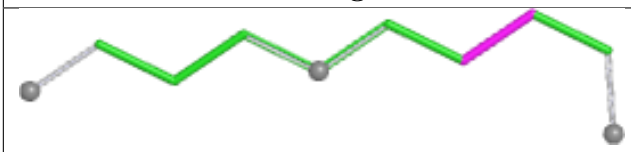
## Ligand SPD L5 5288



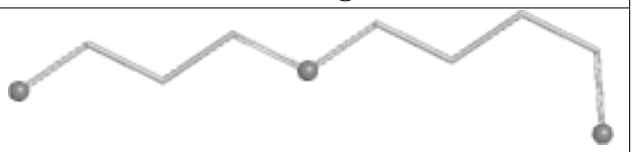
Bond lengths



Bond angles

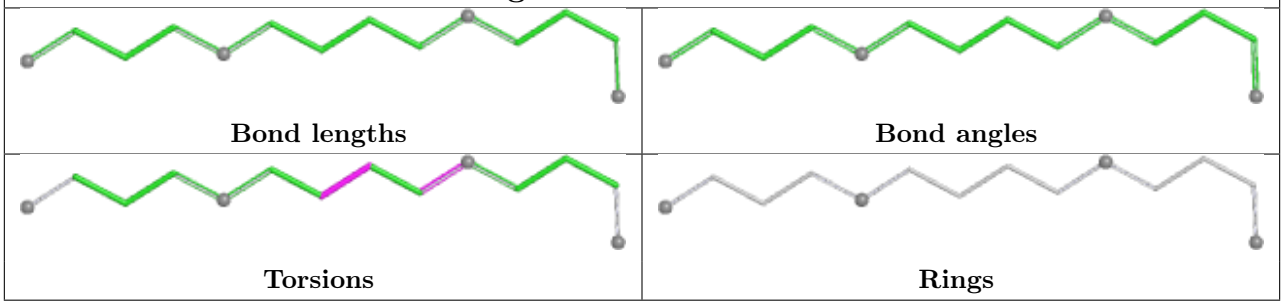


Torsions

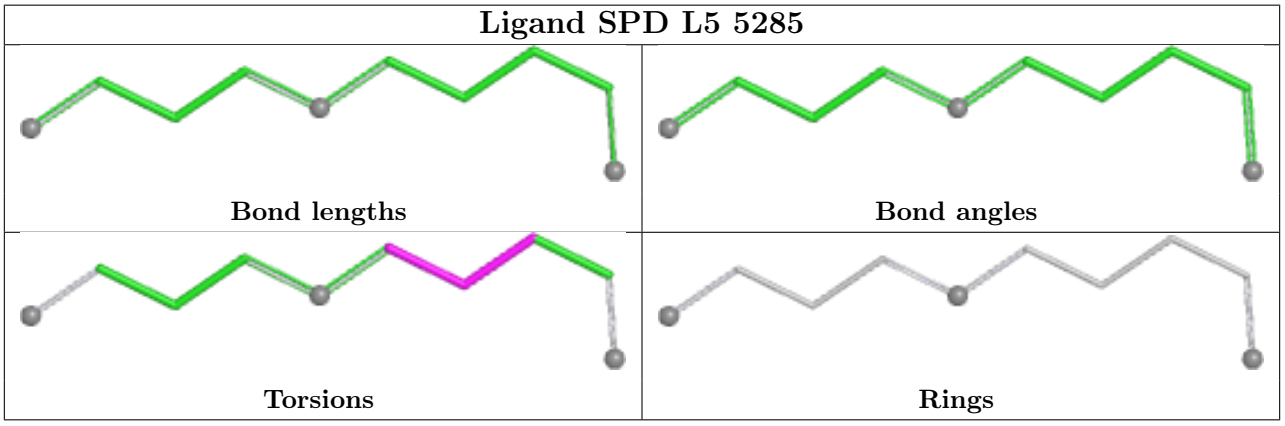


Rings

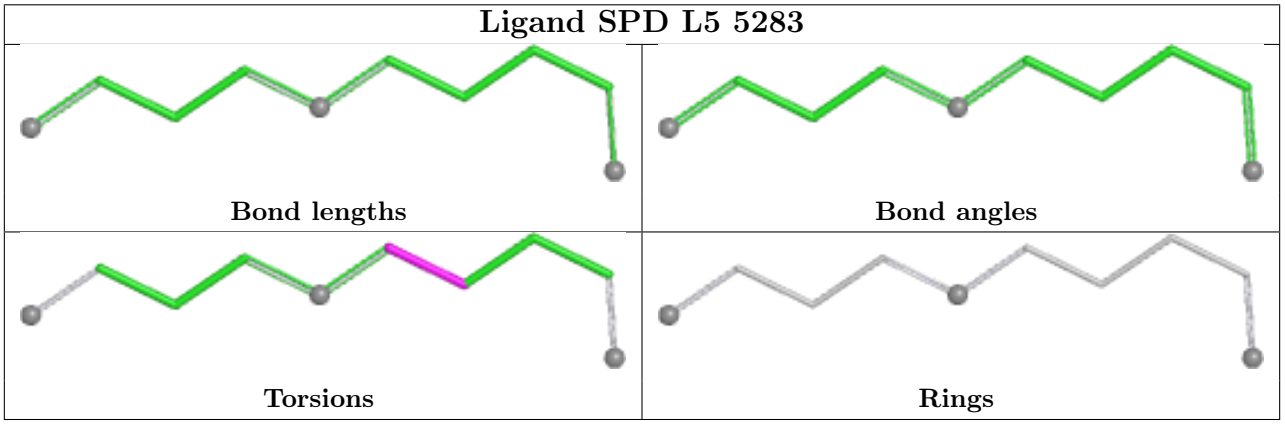
**Ligand SPM L5 5292**



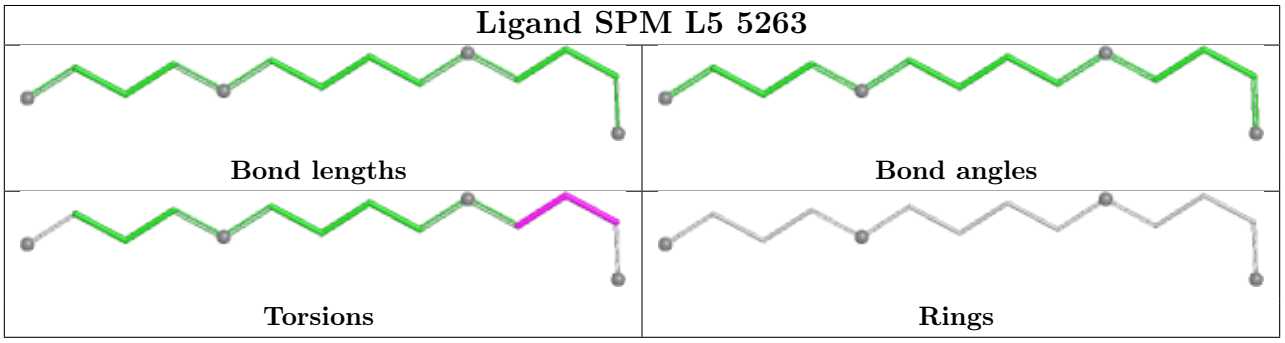

**Ligand SPD L5 5285**



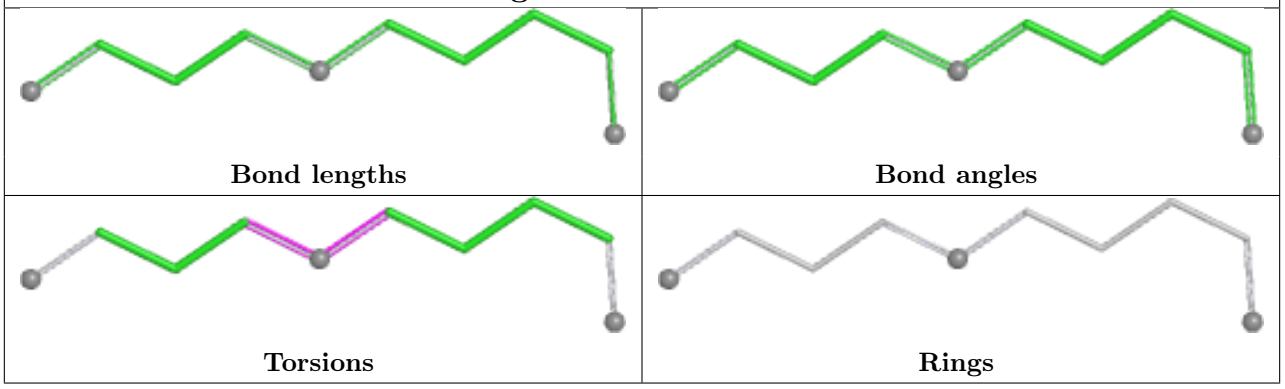

**Ligand SPD L5 5283**



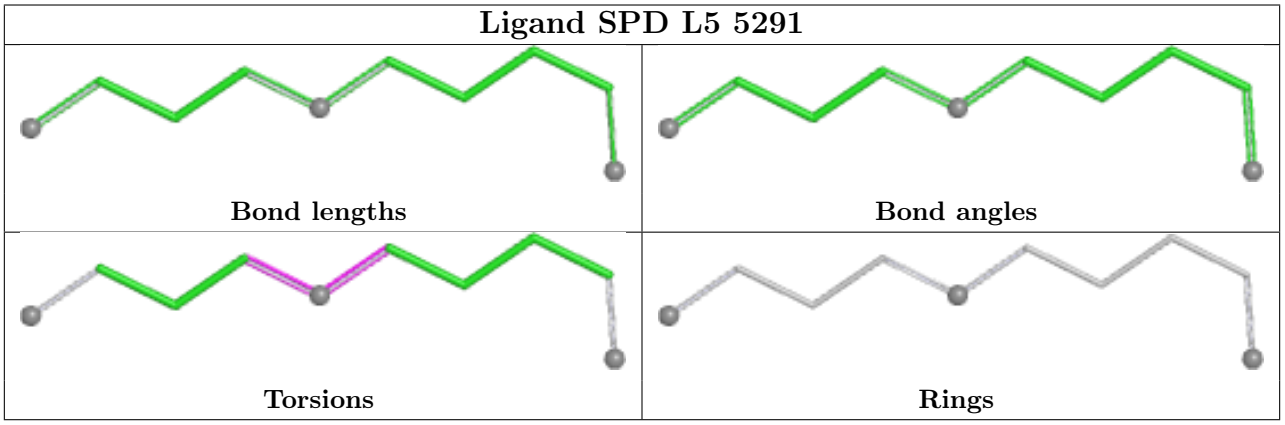

**Ligand SPM L5 5263**



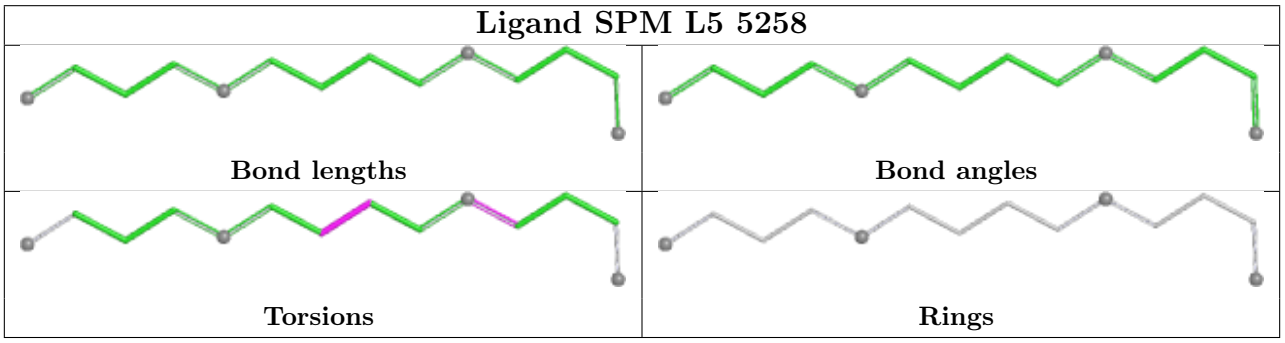
**Ligand SPD L5 5286**



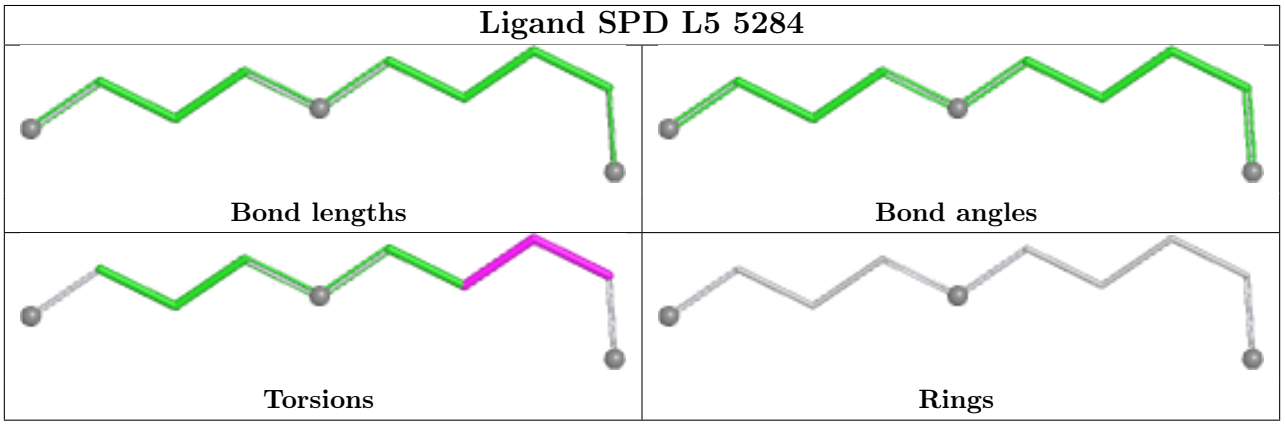

**Ligand SPD L5 5291**

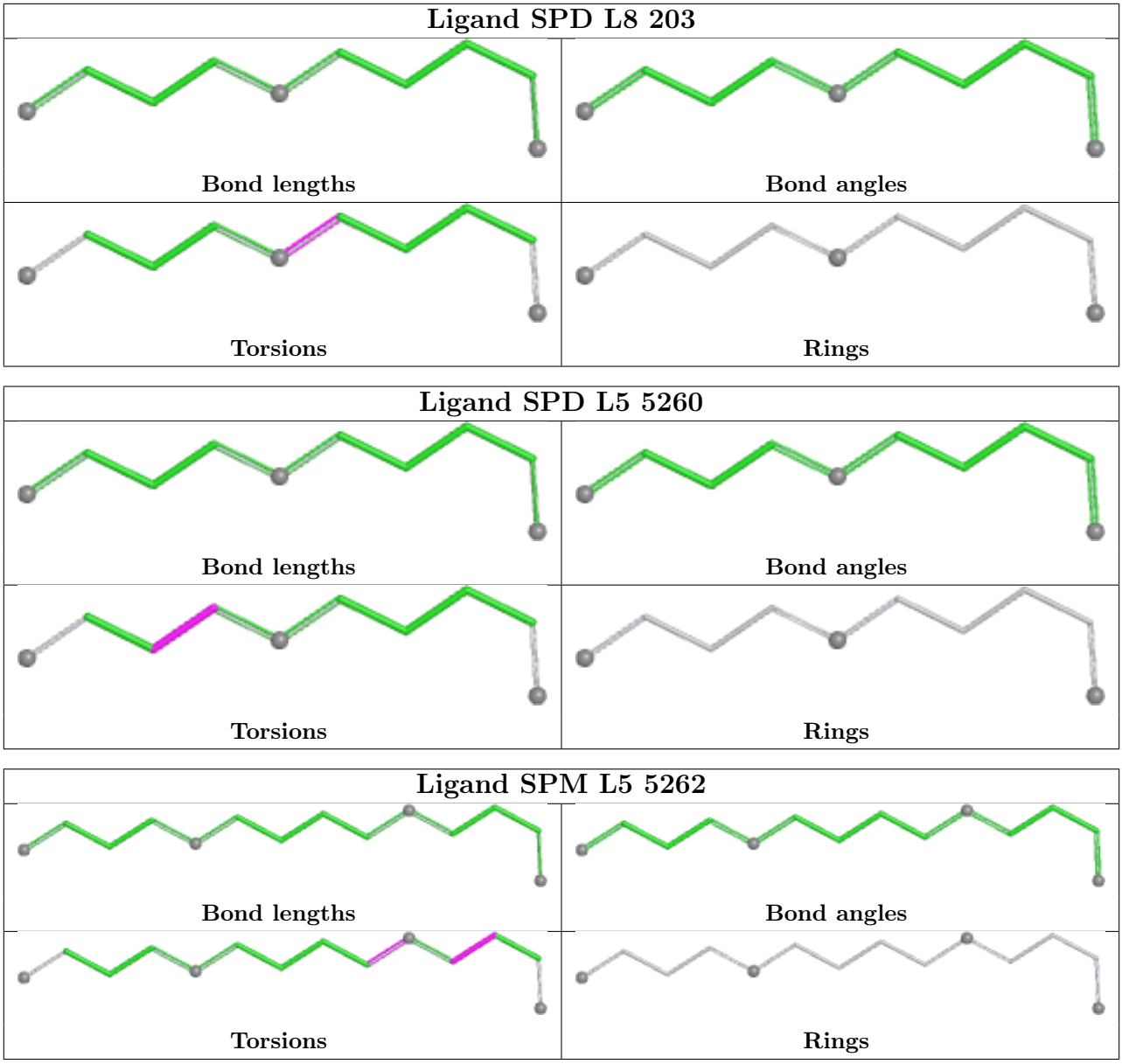



**Ligand SPM L5 5258**




**Ligand SPD L5 5284**






## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|---|---|---|
| 40 | L5 | 10 |
| 19 | S2 | 4 |
| 37 | At | 1 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Number of breaks |
|---|---|---|
| 38 | Pt | 1 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|---|---|---|---|---|---|---|
| 1 | S2 | 753:C | O3' | 785:C | P | 26.68 |
| 1 | L5 | 1706:A | O3' | 1716:G | P | 21.17 |
| 1 | L5 | 2910:G | O3' | 3584:C | P | 20.68 |
| 1 | L5 | 3954:A | O3' | 4056:A | P | 17.41 |
| 1 | L5 | 760:G | O3' | 903:C | P | 16.91 |
| 1 | L5 | 4776:G | O3' | 4858:C | P | 14.21 |
| 1 | L5 | 519:C | O3' | 642:G | P | 13.93 |
| 1 | L5 | 2112:G | O3' | 2249:C | P | 13.81 |
| 1 | S2 | 698:G | O3' | 730:C | P | 13.52 |
| 1 | S2 | 739:C | O3' | 746:C | P | 13.16 |
| 1 | At | 15:G | O3' | 18:G | P | 12.47 |
| 1 | L5 | 990:C | O3' | 1064:G | P | 12.03 |
| 1 | L5 | 1222:A | O3' | 1234:G | P | 11.96 |
| 1 | L5 | 1100:U | O3' | 1167:C | P | 11.90 |
| 1 | Pt | 15:G | O3' | 18:G | P | 9.35 |
| 1 | S2 | 225:G | O3' | 287:U | P | 8.63 |

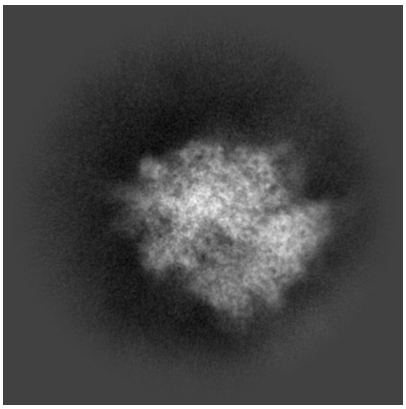
# 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-71340. These allow visual inspection of the internal detail of the map and identification of artifacts.

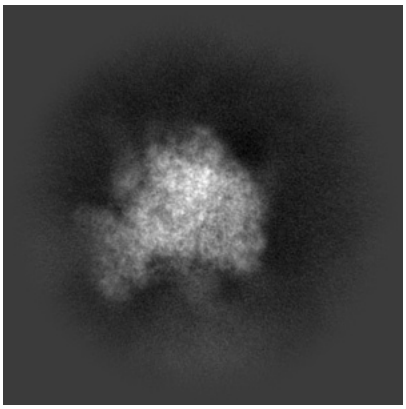
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

## 6.1 Orthogonal projections

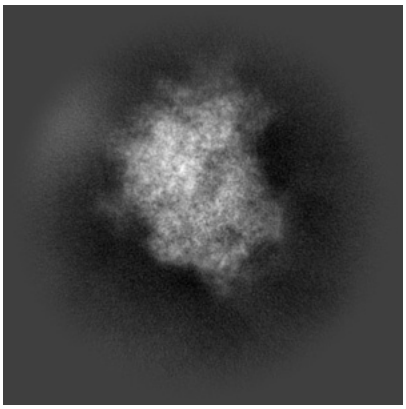
### 6.1.1 Primary map



X

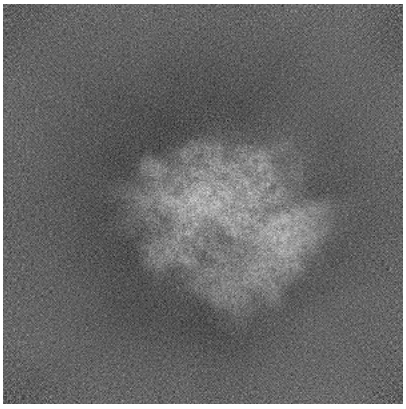


Y

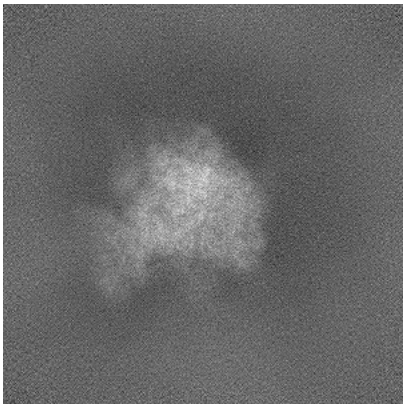


Z

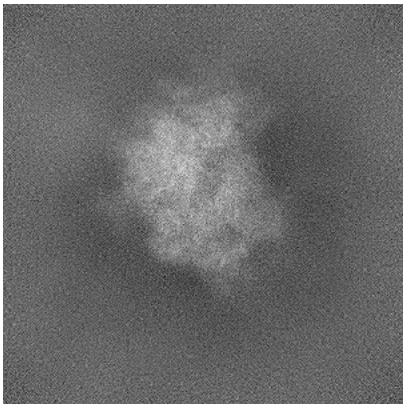
### 6.1.2 Raw map



X



Y

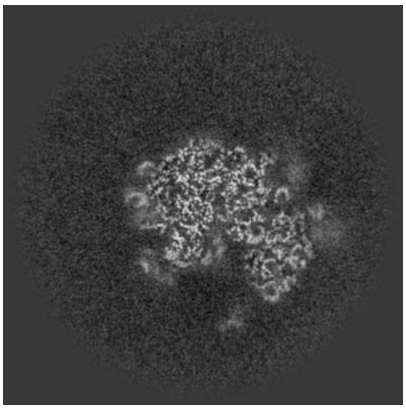


Z

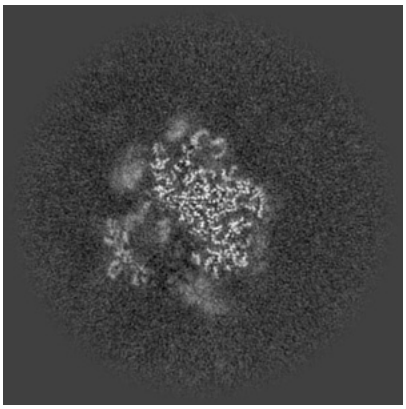
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices (i)

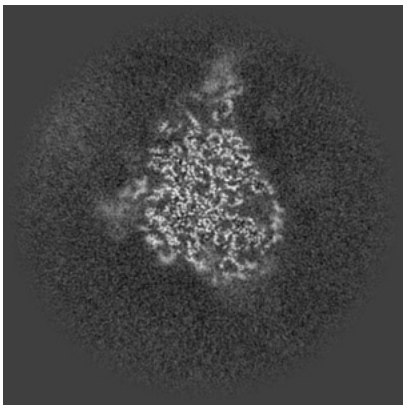
### 6.2.1 Primary map



X Index: 256

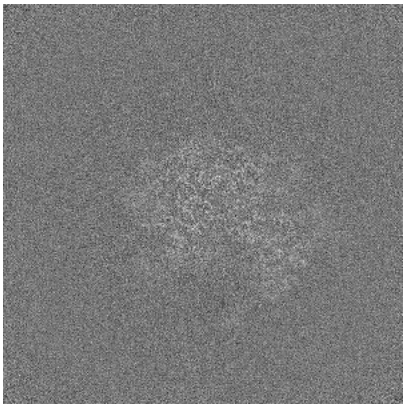


Y Index: 256

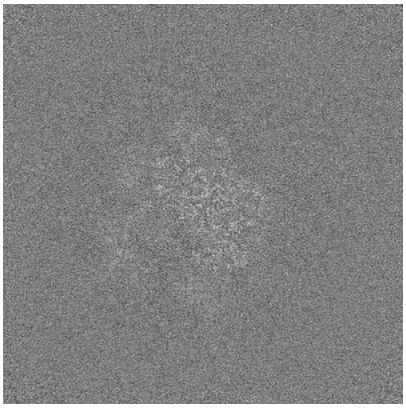


Z Index: 256

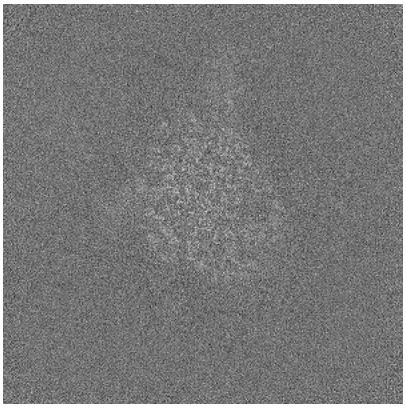
### 6.2.2 Raw map



X Index: 256



Y Index: 256

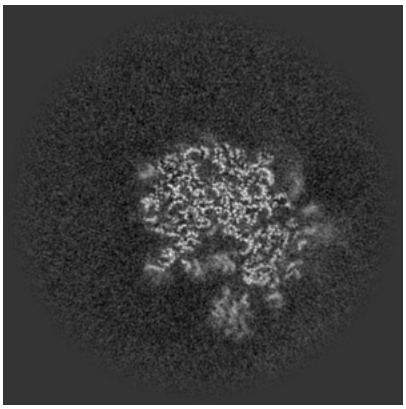


Z Index: 256

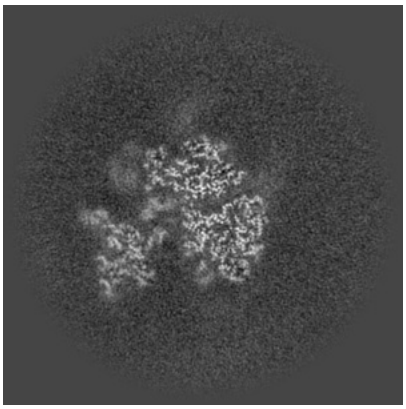
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices (i)

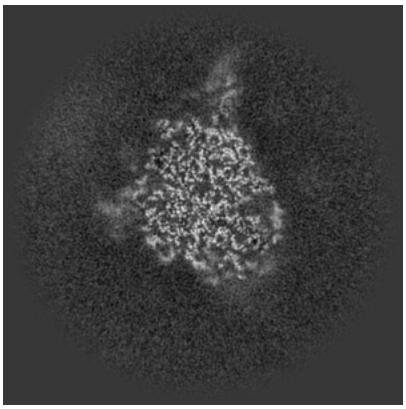
### 6.3.1 Primary map



X Index: 243

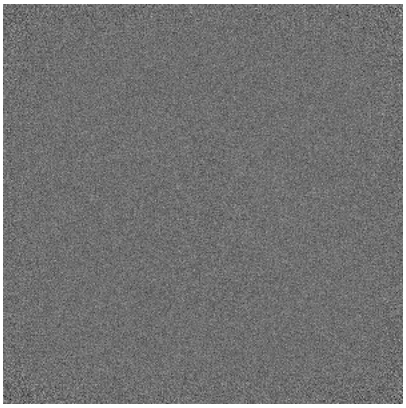


Y Index: 276

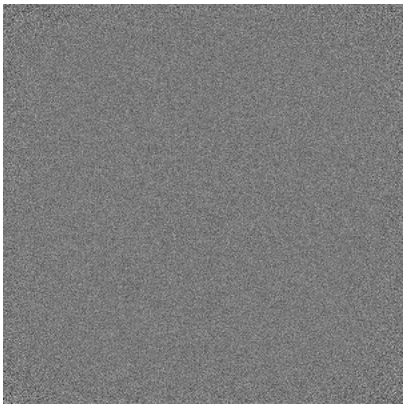


Z Index: 258

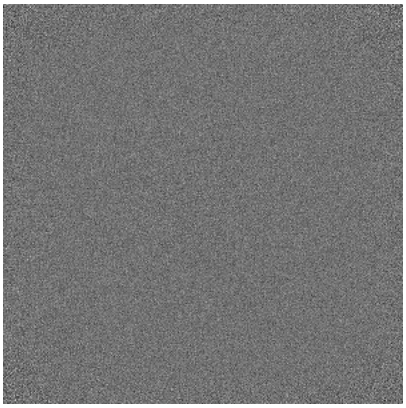
### 6.3.2 Raw map



X Index: 0



Y Index: 0

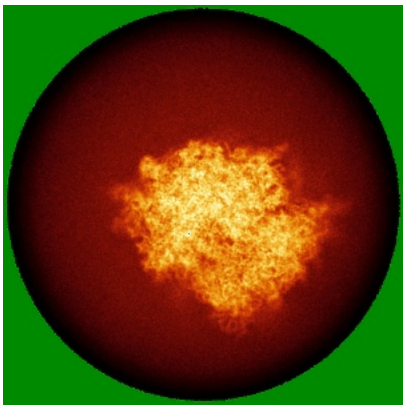


Z Index: 0

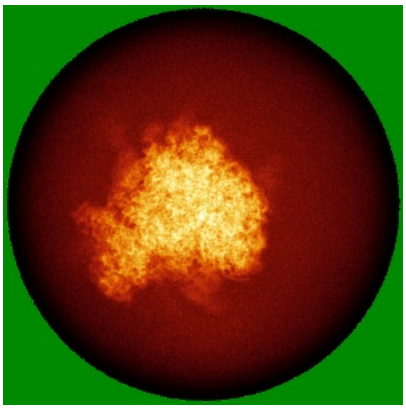
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) (i)

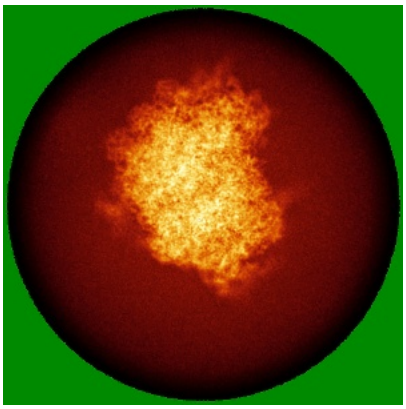
### 6.4.1 Primary map



X

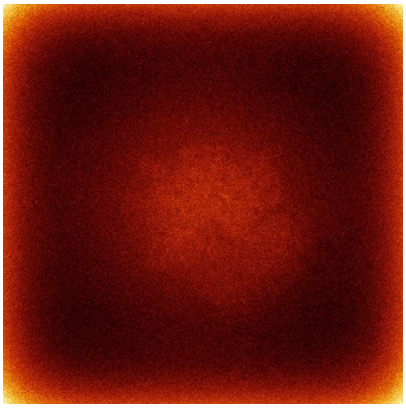


Y

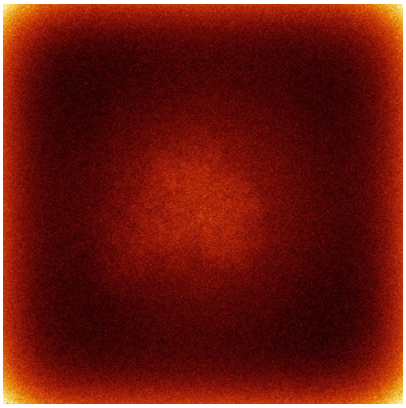


Z

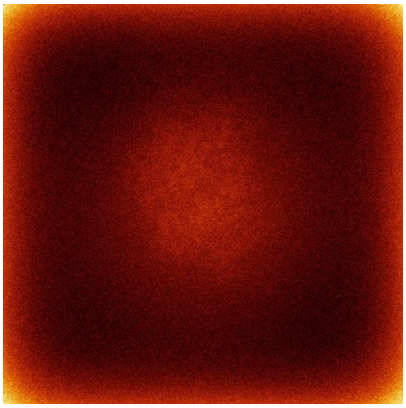
### 6.4.2 Raw map



X



Y

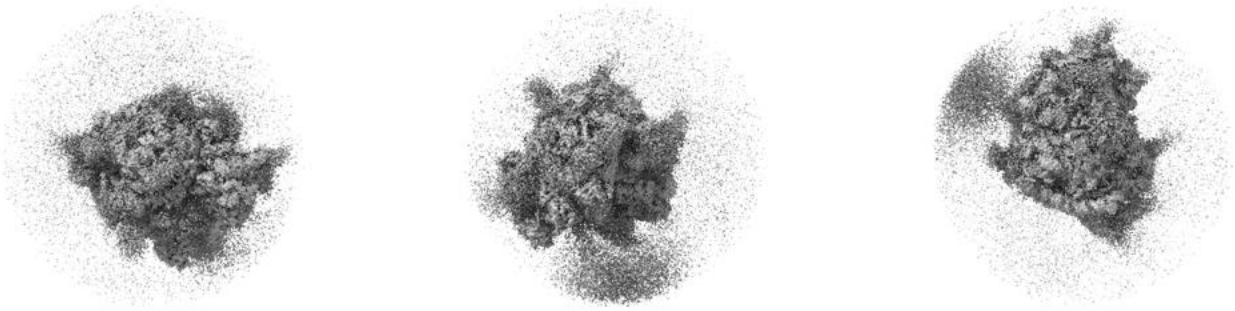


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views (i)

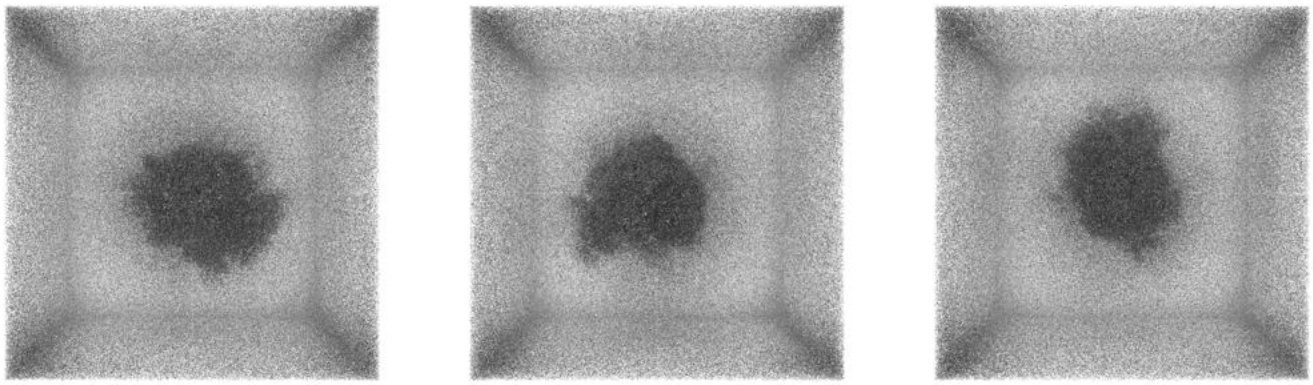
### 6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0758. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

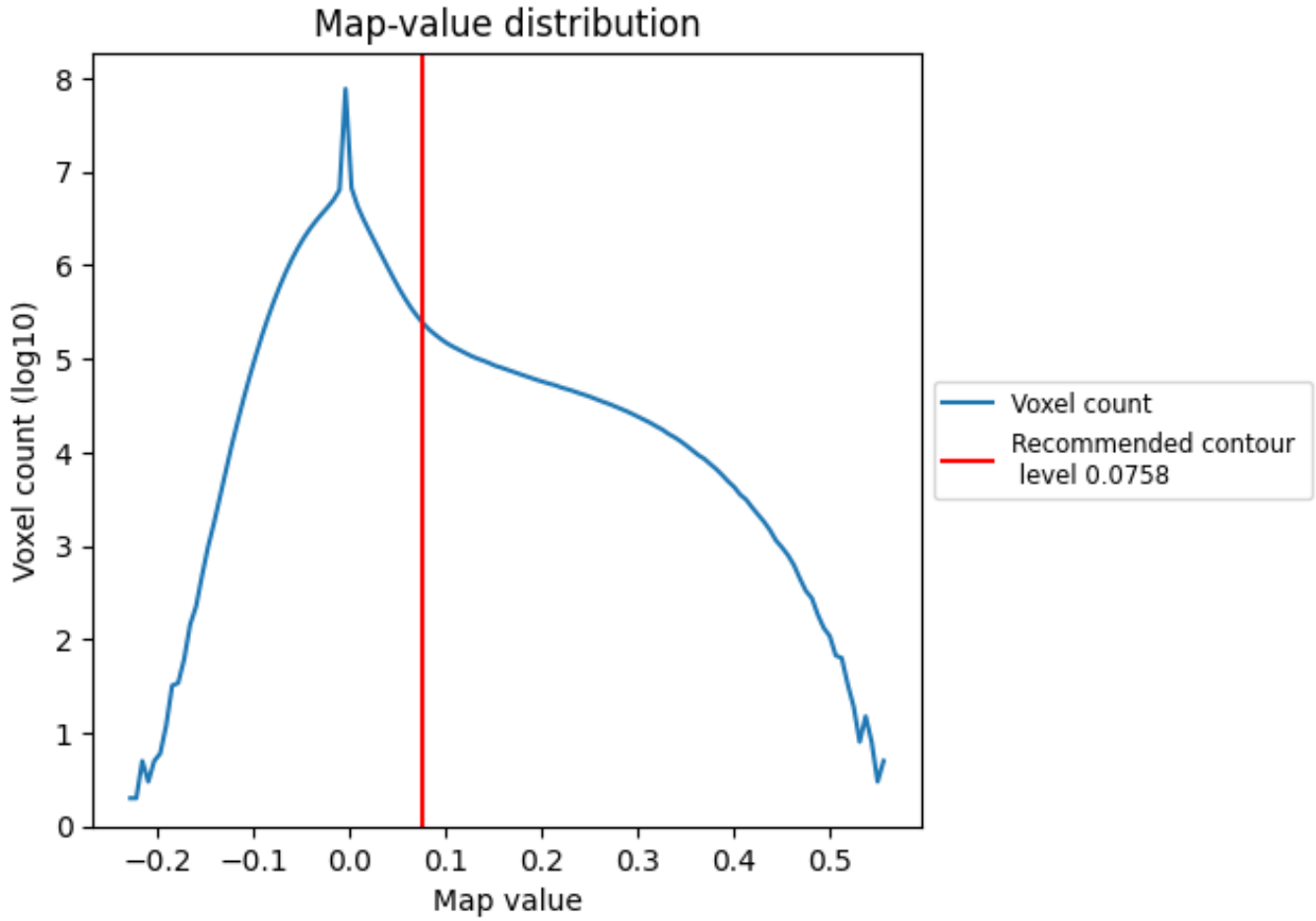
## 6.6 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

# 7 Map analysis

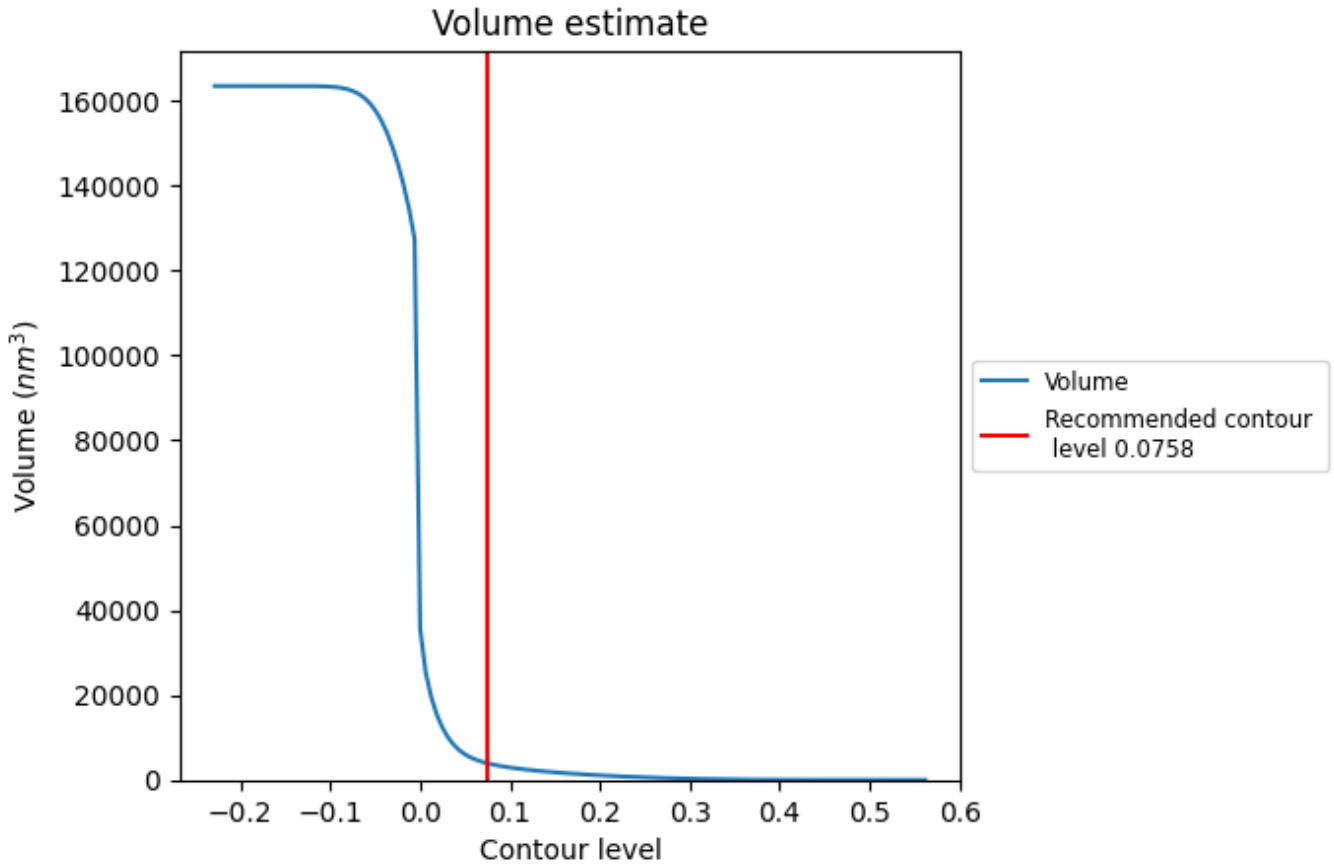
This section contains the results of statistical analysis of the map.

## 7.1 Map-value distribution




The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

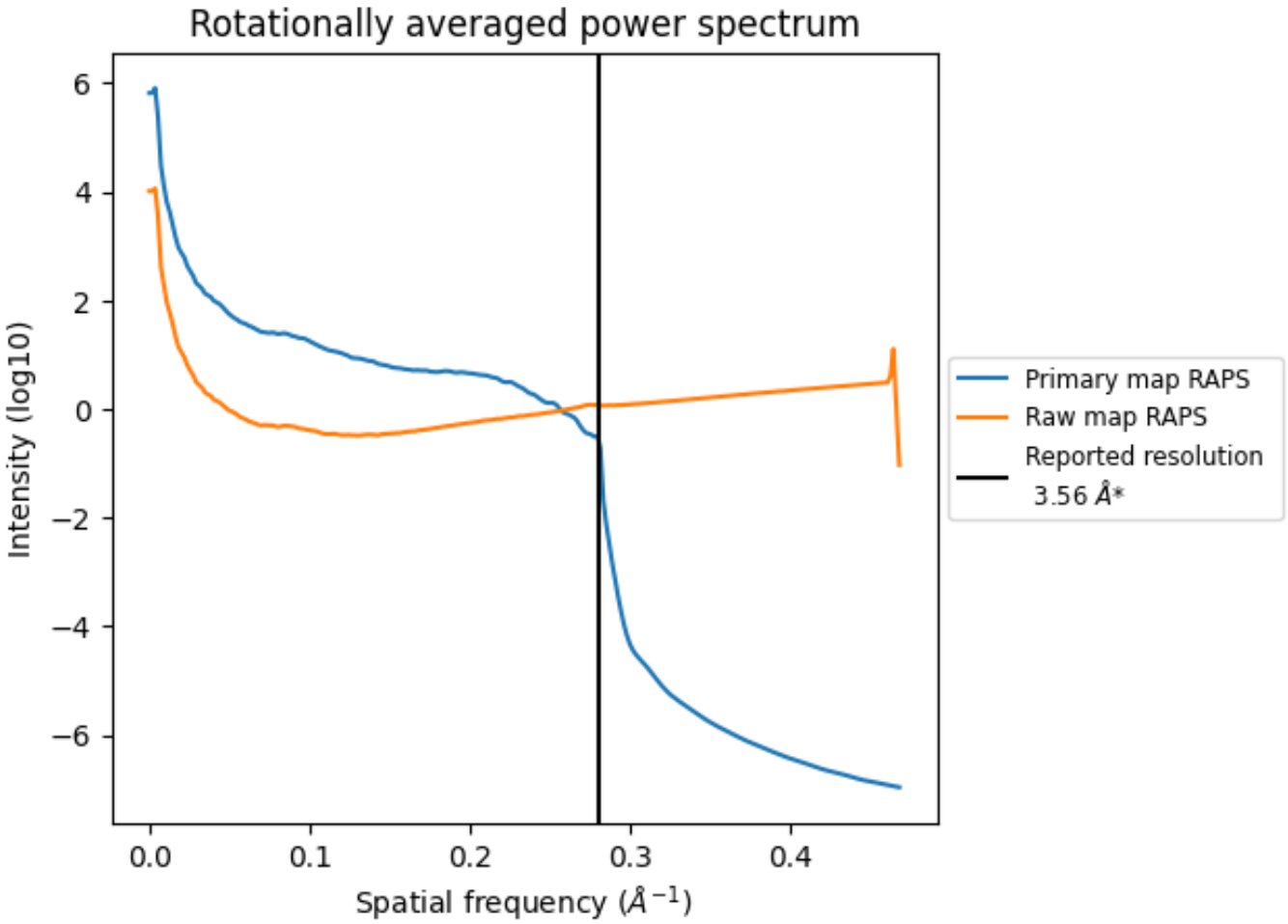
## 7.2 Volume estimate




The volume at the recommended contour level is 3880 $nm^3$; this corresponds to an approximate mass of 3505 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

## 7.3 Rotationally averaged power spectrum (i)

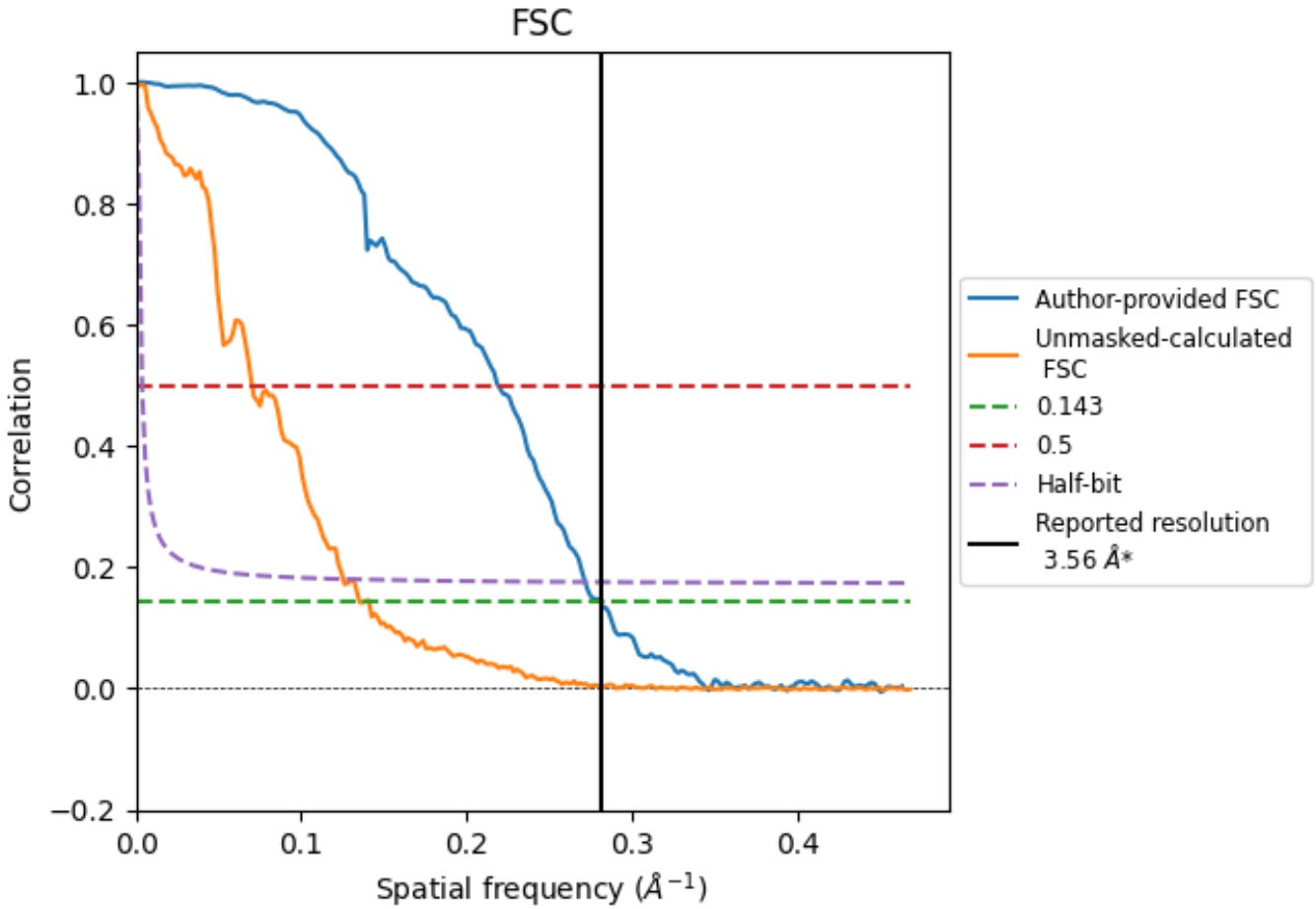



*Reported resolution corresponds to spatial frequency of 0.281 Å$^{-1}$

# 8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

## 8.1 FSC




*Reported resolution corresponds to spatial frequency of 0.281 Å$^{-1}$

## 8.2 Resolution estimates (i)

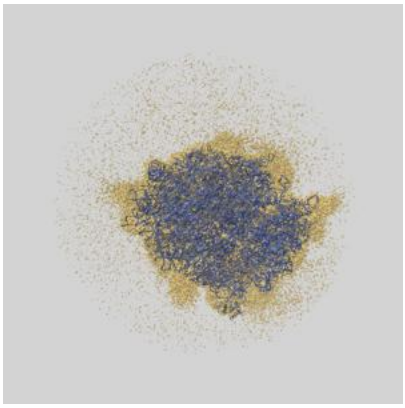
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---|---|---|---|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 3.56 | - | - |
| Author-provided FSC curve | 3.56 | 4.56 | 3.68 |
| Unmasked-calculated* | 7.40 | 14.25 | 7.98 |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 7.40 differs from the reported value 3.56 by more than 10 %

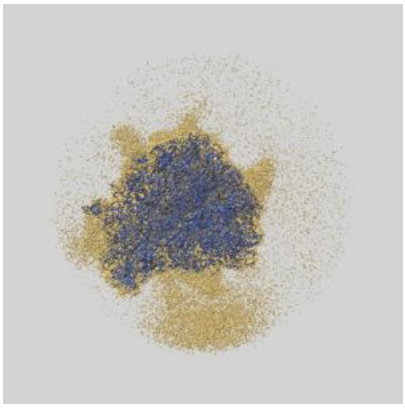
# 9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-71340 and PDB model 9P7F. Per-residue inclusion information can be found in section 3 on page 23.

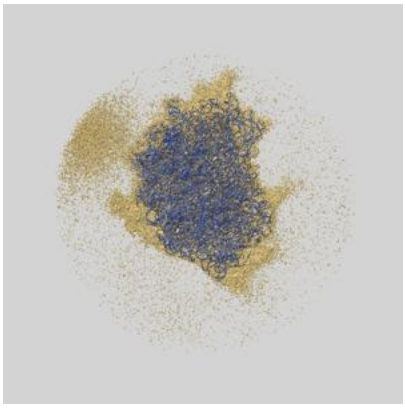
## 9.1 Map-model overlay



X



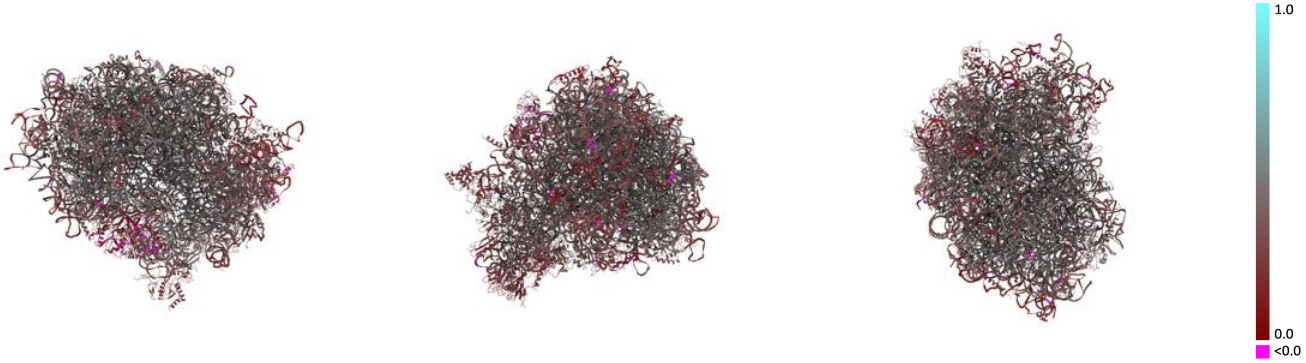
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0758 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

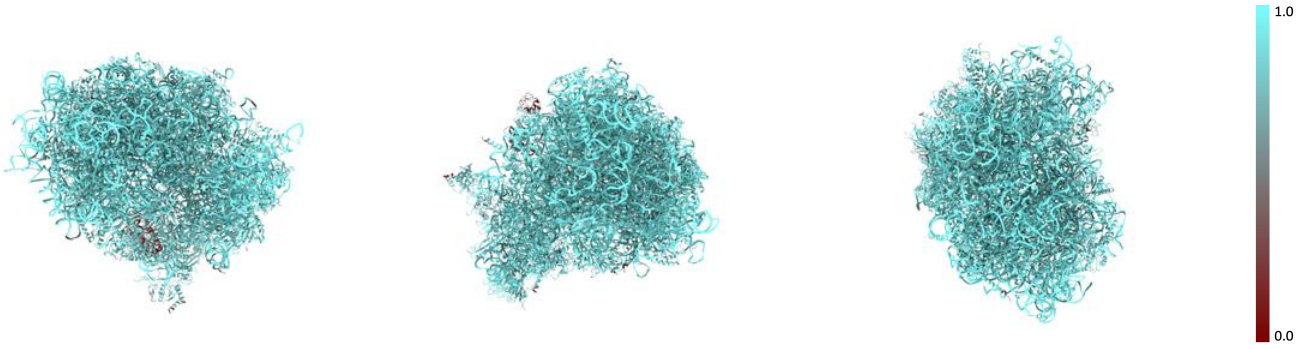
## 9.2 Q-score mapped to coordinate model (i)




X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

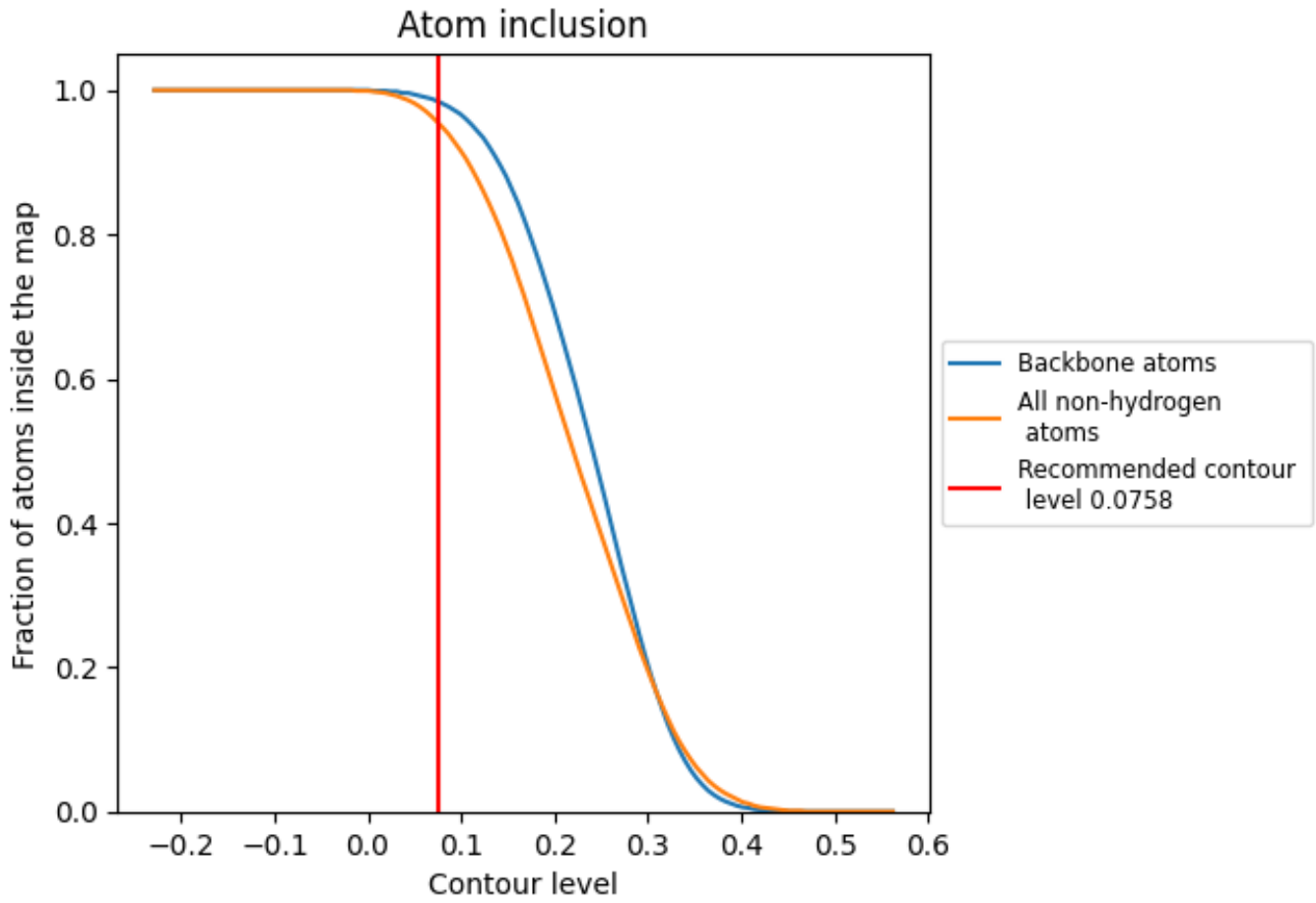
## 9.3 Atom inclusion mapped to coordinate model (i)




X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0758).

## 9.4 Atom inclusion (i)




At the recommended contour level, 98% of all backbone atoms, 95% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.0758) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|---|---|---|
| All | 0.9540 | 0.3750 |
| At | 0.9600 | 0.2810 |
| CI | 0.7570 | 0.3430 |
| L5 | 0.9890 | 0.3840 |
| L7 | 1.0000 | 0.4110 |
| L8 | 0.9960 | 0.3950 |
| LA | 0.9470 | 0.4420 |
| LB | 0.9220 | 0.4300 |
| LC | 0.9340 | 0.4280 |
| LD | 0.9320 | 0.3830 |
| LE | 0.9280 | 0.3730 |
| LF | 0.9350 | 0.4200 |
| LG | 0.8890 | 0.3720 |
| LH | 0.9180 | 0.4170 |
| LI | 0.9360 | 0.4220 |
| LJ | 0.9000 | 0.3480 |
| LL | 0.9230 | 0.4140 |
| LM | 0.9320 | 0.3970 |
| LN | 0.9530 | 0.4380 |
| LO | 0.9170 | 0.4090 |
| LP | 0.9270 | 0.4310 |
| LQ | 0.9450 | 0.4370 |
| LR | 0.9190 | 0.3840 |
| LS | 0.9340 | 0.4360 |
| LT | 0.9330 | 0.4270 |
| LU | 0.9050 | 0.3490 |
| LV | 0.9470 | 0.4470 |
| LW | 0.8980 | 0.3390 |
| LX | 0.9310 | 0.4130 |
| LY | 0.9450 | 0.4060 |
| LZ | 0.9490 | 0.4060 |
| La | 0.9540 | 0.4450 |
| Lb | 0.9030 | 0.3650 |
| Lc | 0.8980 | 0.3800 |
| Ld | 0.9290 | 0.4320 |

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| Chain | Atom inclusion | Q-score |
|---|---|---|
| Le | 0.9370 | 0.4540 |
| Lf | 0.9510 | 0.4490 |
| Lg | 0.9370 | 0.4240 |
| Lh | 0.9150 | 0.3990 |
| Li | 0.9320 | 0.4070 |
| Lj | 0.9600 | 0.4340 |
| Lk | 0.9010 | 0.3650 |
| Ll | 0.9430 | 0.4180 |
| Lm | 0.9420 | 0.4220 |
| Ln | 0.9520 | 0.4250 |
| Lo | 0.9430 | 0.4310 |
| Lp | 0.9230 | 0.4190 |
| Lr | 0.9370 | 0.4300 |
| Ls | 0.6420 | 0.1560 |
| Lt | 0.6030 | 0.1120 |
| Pt | 0.9700 | 0.3110 |
| S2 | 0.9930 | 0.3670 |
| SA | 0.8760 | 0.3250 |
| SB | 0.8680 | 0.3280 |
| SC | 0.9350 | 0.3790 |
| SD | 0.9100 | 0.3440 |
| SE | 0.9270 | 0.3580 |
| SF | 0.8490 | 0.3120 |
| SG | 0.9050 | 0.3200 |
| SH | 0.8860 | 0.3010 |
| SI | 0.9200 | 0.3650 |
| SJ | 0.9040 | 0.3430 |
| SK | 0.8970 | 0.3110 |
| SL | 0.9050 | 0.3860 |
| SM | 0.7500 | 0.2240 |
| SN | 0.8920 | 0.3540 |
| SO | 0.8810 | 0.3460 |
| SP | 0.9140 | 0.3320 |
| SQ | 0.9100 | 0.3210 |
| SR | 0.8720 | 0.3060 |
| SS | 0.8770 | 0.3170 |
| ST | 0.9120 | 0.3160 |
| SU | 0.9020 | 0.3060 |
| SV | 0.9260 | 0.3600 |
| SW | 0.9390 | 0.3840 |
| SX | 0.9270 | 0.4100 |
| SY | 0.8860 | 0.3430 |

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| Chain | Atom inclusion | Q-score |
|---|---|---|
| SZ | 0.8080 | 0.2790 |
| Sa | 0.9460 | 0.3880 |
| Sb | 0.9120 | 0.3490 |
| Sc | 0.8700 | 0.3370 |
| Sd | 0.9570 | 0.3600 |
| Se | 0.8630 | 0.3320 |
| Sf | 0.8420 | 0.2530 |
| Sg | 0.9020 | 0.2570 |